

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|   |                                  |
|---|----------------------------------|
| In re Application of:   | Group Art Unit: Not yet assigned |
| Baker et al.  | Examiner: Not yet assigned       |
| Serial No.: Not yet assigned  |                                  |
| Filed: Herewith   |                                  |
| For: <i>Secreted and Transmembrane<br/>Polypeptides and Nucleic Acids<br/>Encoding the Same</i> |                                  |

**REQUEST TO USE COMPUTER READABLE FORM OF SEQUENCE LISTING  
FROM PARENT APPLICATION PURSUANT TO 37 C.F.R. § 1.821 (e)**

Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

The patent application filed herewith is a continuing application of currently pending application Serial No. 09/866,028, filed on May 25, 2001. The Sequence Listings in (a) the herewith filed patent application and (2) currently pending patent application Serial No.09/866,028, filed on May 25, 2001, are identical. Therefore, pursuant to 37 C.F.R. § 1.821(e), Applicants respectfully request that the compliant computer readable form of the Sequence Listing filed on May 25, 2001 in parent application Serial No. 09/866,028 be used as the computer readable form for the herewith filed patent application. The paper copy of the Sequence Listing submitted herewith

09943780-083001

**Serial No.:** Not yet assigned  
**Filed:** Herewith

is identical to that on the compliant computer readable form of the Sequence Listing filed on May 25, 2001 in parent application Serial No. 09/866,028.

Respectfully submitted,

GENENTECH, INC.

By: Elizabeth M. Barnes  
Elizabeth M. Barnes, Ph.D.  
Reg. No. 35,059  
Telephone: (650) 225-4563



09157

PATENT TRADEMARK OFFICE

0943780-083001

# Sequence Listing

<110> Baker, Kevin  
 Botstein, David  
 Eaton, Dan  
 Ferrara, Napoleone  
 Filvaroff, Ellen  
 Gerritsen, Mary  
 Goddard, Audrey  
 Godowski, Paul  
 Grimaldi, Christopher  
 Gurney, Austin  
 Hillan, Kenneth  
 Kljavin, Ivar  
 Napier, Mary  
 Roy, Margaret  
 Tumas, Daniel  
 Wood, William

<120> SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC  
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35 40 45  
Asp Asp Asp Asp Asp Glu Asp Asn Ser Leu Phe Pro Thr Arg Glu  
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Pro Arg Ser His Phe Phe Pro Phe Asp Leu Phe Pro Met Cys Pro  
65 70 75  
Phe Gly Cys Gln Cys Tyr Ser Arg Val Val His Cys Ser Asp Leu  
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Gly Leu Thr Ser Val Pro Thr Asn Ile Pro Phe Asp Thr Arg Met  
95 100 105  
Leu Asp Leu Gln Asn Asn Lys Ile Lys Glu Ile Lys Glu Asn Asp  
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125 130 135  
Lys Leu Thr Lys Ile His Pro Lys Ala Phe Leu Thr Thr Lys Lys  
140 145 150  
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155 160 165  
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170 175 180  
Lys Val Lys Lys Ile Gln Lys Asp Thr Phe Lys Gly Met Asn Ala  
185 190 195  
Leu His Val Leu Glu Met Ser Ala Asn Pro Leu Asp Asn Asn Gly  
200 205 210

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|                 |                     |                         |
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| Ile Ala Glu Ala | Lys Leu Thr Ser Val | Pro Lys Gly Leu Pro Pro |
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| Thr Leu Leu Glu | Leu His Leu Asp Tyr | Asn Lys Ile Ser Thr Val |
| 245             | 250                 | 255                     |
| Glu Leu Glu Asp | Phe Lys Arg Tyr Lys | Glu Leu Gln Arg Leu Gly |
| 260             | 265                 | 270                     |
| Leu Gly Asn Asn | Lys Ile Thr Asp Ile | Glu Asn Gly Ser Leu Ala |
| 275             | 280                 | 285                     |
| Asn Ile Pro Arg | Val Arg Glu Ile His | Leu Glu Asn Asn Lys Leu |
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| Lys Lys Ile Pro | Ser Gly Leu Pro Glu | Leu Lys Tyr Leu Gln Ile |
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| Phe Cys Pro Thr | Val Pro Lys Met Lys | Lys Ser Leu Tyr Ser Ala |
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| Val | Ala | Leu | Val | Thr<br>260 | Leu | Thr | His | Pro | Ser<br>265 | Gly | Glu | Val | Trp | Gly<br>270 |
| Pro | Leu | Ile | Arg | His<br>275 | Arg | Ala | Leu | Ala | Ala<br>280 | Glu | Thr | Phe | Ser | Ala<br>285 |
| Ile | Leu | Thr | Leu | Glu<br>290 | Gly | Pro | Pro | Gln | Gln<br>295 | Gly | Val | Gly | Gly | Ile<br>300 |
| Thr | Leu | Leu | Thr | Leu<br>305 | Ser | Asp | Thr | Glu | Asp<br>310 | Ser | Leu | His | Phe | Leu<br>315 |
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| Gln | Val | Pro | Leu | Arg<br>335 | Leu | Gln | Ile | Leu | His<br>340 | Gln | Gly | Gln | Leu | Leu<br>345 |
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|   | 380 | 385 | 390 |
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| Leu Gln Ser Val Leu Cys Gly Ala Asp Ala Leu Ile Pro Val Gln | 410 | 415 | 420 |
| Thr Gly Ala Ala Gly Ser Ala Ser Leu Thr Leu Leu Gly Asn Gly | 425 | 430 | 435 |
| Ser Leu Ile Tyr Gln Val Gln Val Val Gly Thr Ser Ser Glu Val | 440 | 445 | 450 |
| Val Ala Met Thr Leu Glu Thr Lys Pro Gln Arg Arg Asp Gln Arg | 455 | 460 | 465 |
| Thr Val Leu Cys His Met Ala Gly Leu Gln Pro Gly Gly His Thr | 470 | 475 | 480 |
| Ala Val Gly Ile Cys Pro Gly Leu Gly Ala Arg Gly Ala His Met | 485 | 490 | 495 |
| Leu Leu Gln Asn Glu Leu Phe Leu Asn Val Gly Thr Lys Asp Phe | 500 | 505 | 510 |
| Pro Asp Gly Glu Leu Arg Gly His Val Ala Ala Leu Pro Tyr Cys | 515 | 520 | 525 |
| Gly His Ser Ala Arg His Asp Thr Leu Pro Val Pro Leu Ala Gly | 530 | 535 | 540 |
| Ala Leu Val Leu Pro Pro Val Lys Ser Gln Ala Ala Gly His Ala | 545 | 550 | 555 |
| Trp Leu Ser Leu Asp Thr His Cys His Leu His Tyr Glu Val Leu | 560 | 565 | 570 |
| Leu Ala Gly Leu Gly Gly Ser Glu Gln Gly Thr Val Thr Ala His | 575 | 580 | 585 |
| Leu Leu Gly Pro Pro Gly Thr Pro Gly Pro Arg Arg Leu Leu Lys | 590 | 595 | 600 |
| Gly Phe Tyr Gly Ser Glu Ala Gln Gly Val Val Lys Asp Leu Glu | 605 | 610 | 615 |
| Pro Glu Leu Leu Arg His Leu Ala Lys Gly Met Ala Ser Leu Met | 620 | 625 | 630 |
| Ile Thr Thr Lys Gly Ser Pro Arg Gly Glu Leu Arg Gly Gln Val | 635 | 640 | 645 |
| His Ile Ala Asn Gln Cys Glu Val Gly Gly Leu Arg Leu Glu Ala | 650 | 655 | 660 |

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|---|-----|-----|-----|
| Ala Gly Ala Glu Gly Val Arg Ala Leu Gly Ala Pro Asp Thr Ala | 665 | 670 | 675 |
| Ser Ala Ala Pro Pro Val Val Pro Gly Leu Pro Ala Leu Ala Pro | 680 | 685 | 690 |
| Ala Lys Pro Gly Gly Pro Gly Arg Pro Arg Asp Pro Asn Thr Cys | 695 | 700 | 705 |
| Phe Phe Glu Gly Gln Gln Arg Pro His Gly Ala Arg Trp Ala Pro | 710 | 715 | 720 |
| Asn Tyr Asp Pro Leu Cys Ser Leu Cys Thr Cys Gln Arg Arg Thr | 725 | 730 | 735 |
| Val Ile Cys Asp Pro Val Val Cys Pro Pro Pro Ser Cys Pro His | 740 | 745 | 750 |
| Pro Val Gln Ala Pro Asp Gln Cys Cys Pro Val Cys Pro Glu Lys | 755 | 760 | 765 |
| Gln Asp Val Arg Asp Leu Pro Gly Leu Pro Arg Ser Arg Asp Pro | 770 | 775 | 780 |
| Gly Glu Gly Cys Tyr Phe Asp Gly Asp Arg Ser Trp Arg Ala Ala | 785 | 790 | 795 |
| Gly Thr Arg Trp His Pro Val Val Pro Pro Phe Gly Leu Ile Lys | 800 | 805 | 810 |
| Cys Ala Val Cys Thr Cys Lys Gly Gly Thr Gly Glu Val His Cys | 815 | 820 | 825 |
| Glu Lys Val Gln Cys Pro Arg Leu Ala Cys Ala Gln Pro Val Arg | 830 | 835 | 840 |
| Val Asn Pro Thr Asp Cys Cys Lys Gln Cys Pro Val Gly Ser Gly | 845 | 850 | 855 |
| Ala His Pro Gln Leu Gly Asp Pro Met Gln Ala Asp Gly Pro Arg | 860 | 865 | 870 |
| Gly Cys Arg Phe Ala Gly Gln Trp Phe Pro Glu Ser Gln Ser Trp | 875 | 880 | 885 |
| His Pro Ser Val Pro Pro Phe Gly Glu Met Ser Cys Ile Thr Cys | 890 | 895 | 900 |
| Arg Cys Gly Ala Gly Val Pro His Cys Glu Arg Asp Asp Cys Ser | 905 | 910 | 915 |
| Leu Pro Leu Ser Cys Gly Ser Gly Lys Glu Ser Arg Cys Cys Ser | 920 | 925 | 930 |
| Arg Cys Thr Ala His Arg Arg Pro Pro Glu Thr Arg Thr Asp Pro | 935 | 940 | 945 |
| Glu Leu Glu Lys Glu Ala Glu Gly Ser                         |     |     |     |

<210> 8  
 <211> 44  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide probe

<400> 8  
 gactagttct agatcgcgag cggccgccct tttttttttt tttt 44

<210> 9  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 9  
 cggacgcgtg gggcctgcgc acccagct 28

<210> 10  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 10  
 gccgctcccc gaacgggcag cggctccttc tcagaa 36

<210> 11  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 11  
 ggcgacagc acgcagcgca tcaccccgaa tggttc 36

<210> 12  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 12  
 gtgctgcca tccgttctga gaagga 26

<210> 13

<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 13  
gcaggggtgct caaacaggac ac 22

<210> 14  
<211> 3231  
<212> DNA  
<213> Homo Sapien

<400> 14  
ggcggagcag ccctagccgc caccgtcgct ctgcagctc tcgtcgccac 50  
tgccaccgcc gccgccgtca ctgcgtcctg gctccggctc ccgcgccctc 100  
ccggccggcc atgcagcccc gccgcgcccc ggcgcccggg gcgcagctgc 150  
tgcccgcgct ggccctgctg ctgctgctgc tcggagcggg gccccgaggc 200  
agctccctgg ccaaccgggt gcccgcgcg cccttgtctg cgcgcgggcc 250  
gtgcgccgcg cagccctgcc ggaatggggg tgtgtgcacc tcgcgccctg 300  
agccggaccc gcagcaccgc gccccgcgcg gcgagcctgg ctacagctgc 350  
acctgccccg ccgggatctc cggcgccaac tgccagcttg ttgcagatcc 400  
ttgtgccagc aacccttgct accatggcaa ctgcagcagc agcagcagca 450  
gcagcagcga tggctacctc tgcatttgca atgaaggcta tgaagggtccc 500  
aactgtgaac aggcaacttc cagtctccca gccactgggt ggaccgaatc 550  
catggcacc cgcagcttc agcctgttcc tgctactcag gagcctgaca 600  
aaatcctgcc tcgtctcag gcaacgggtga cactgcctac ctggcagccg 650  
aaaacagggc agaaagttgt agaaatgaaa tgggatcaag tggaggtgat 700  
cccagatatt gcctgtggga atgccagttc taacagctct gcgggtggcc 750  
gcctgggtatc ctttgaagtgc ccacagaaca cctcagtcaa gattcggcaa 800  
gatgccactg cctcactgat tttgctctgg aaggtcacgg ccacaggatt 850  
ccaacagtgc tccctcatag atggacgaag tgtgaccccc cttcaggctt 900  
caggggggact ggtcctcctg gaggagatgc tcgccttggg gaataatcac 950  
tttattggtt ttgtgaatga ttctgtgact aagtctattg tggctttgcg 1000  
cttaactctg gtggtgaagg tcagcacctg tgtgccgggg gagagtcacg 1050



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gaggcaactt tttcctgtac ctgtgaggag cagtacgtgg gtactttctg 1150  
tgaagaatac gatgcttgcc agaggaaacc ttgccaaaac aacgcgagct 1200  
gtattgatgc aaatgaaaag caagatggga gcaatttcac ctgtgtttgc 1250  
cttcctgggtt atactggaga gctttgccag tccaagattg attactgcat 1300  
cctagacca tgcagaaatg gagcaacatg catttccagt ctcaagtggat 1350  
tcacctgcca gtgtccagaa ggatacttcg gatctgcttg tgaagaaaag 1400  
gtggaccctt gcgcctcgtc tccgtgccag aacaacggca cctgctatgt 1450  
ggacggggta cactttacct gcaactgcag cccgggcttc acagggccga 1500  
cctgtgceca gcttattgac ttctgtgccc tcagcccctg tgctcatggc 1550  
acgtgccgca gcgtgggcac cagctacaaa tgccctctgtg atccagggtta 1600  
ccatggcctc tactgtgagg aggaatataa tgagtgcctc tccgctccat 1650  
gcctgaatgc agccacctgc agggacctcg ttaatggcta tgagtgtgtg 1700  
tgccctggcag aatacaaagg aacacactgt gaattgtaca aggatccctg 1750  
cgctaacgtc agctgtctga acggagccac ctgtgacagc gacggcctga 1800  
atggcacgtg catctgtgca cccgggttta cagggtgaaga gtgcgacatt 1850  
gacataaatg aatgtgacag taaccctcgc caccatgggtg ggagctgcct 1900  
ggaccagccc aatgggtata actgccactg cccgcatggg tgggtgggag 1950  
caaactgtga gatccacctc caatggaagt ccgggcacat ggccggagagc 2000  
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cgtggccttc atccttatgc tgatcctcct gatcgtgggg atttgccgca 2100  
tcagccgcat tgaataccag ggttcttcca ggccagccta tgaggagttc 2150  
tacaactgcc gcagcatcga cagcgagtgc agcaatgcc ttgcatccat 2200  
ccggcatgcc aggtttggaa agaaatcccg gcctgcaatg tatgatgtga 2250  
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ctgattaaaa ctaaagattt gtaatctttt tttggattat ttttcaaaaa 2350  
gatgagatac tacactcatt taaatatatt taagaaaata aaaagcttaa 2400  
gaaatttaaa atgctagctg ctcaagagtt ttcagtagaa tatttaagaa 2450  
ctaattttct gcagctttta gtttggaata aatattttta aaacaaaatt 2500

tgtgaaacct atagacgatg ttttaatgta ccttcagctc tctaaactgt 2550  
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 gtaacgtagc atatgatgta taatagagta taccggttac ttaaaaagaa 2750  
 gtctgaaatg ttcgttttgt ggaaaagaaa ctagttaaat ttactattcc 2800  
 taaccogaat gaaattagcc tttgccttat tctgtgcatg ggtaagtaac 2850  
 ttattttctgc actgttttgt tgaactttgt ggaaacattc tttcgagttt 2900  
 gtttttgtca ttttcgtaac agtcgtcgaa ctaggcctca aaaacatacg 2950  
 taacgaaaag gcctagcgag gcaaattctg attgatttga atctatattt 3000  
 ttcttttaaaa agtcaagggt tctatattgt gagtaaatta aatttacatt 3050  
 tgagttgttt gttgctaaga ggtagtaaata gtaagagagt actggttcct 3100  
 tcagtagtga gtattttctca tagtgcagct ttatttatct ccaggatgtt 3150  
 tttgtggctg tatttgattg atatgtgctt cttctgattc ttgctaattt 3200  
 ccaaccatat tgaataaatg tgatcaagtc a 3231

<210> 15  
 <211> 737  
 <212> PRT  
 <213> Homo Sapien

<400> 15  
 Met Gln Pro Arg Arg Ala Gln Ala Pro Gly Ala Gln Leu Leu Pro  
 1 5 10 15  
 Ala Leu Ala Leu Leu Leu Leu Leu Leu Gly Ala Gly Pro Arg Gly  
 20 25 30  
 Ser Ser Leu Ala Asn Pro Val Pro Ala Ala Pro Leu Ser Ala Pro  
 35 40 45  
 Gly Pro Cys Ala Ala Gln Pro Cys Arg Asn Gly Gly Val Cys Thr  
 50 55 60  
 Ser Arg Pro Glu Pro Asp Pro Gln His Pro Ala Pro Ala Gly Glu  
 65 70 75  
 Pro Gly Tyr Ser Cys Thr Cys Pro Ala Gly Ile Ser Gly Ala Asn  
 80 85 90  
 Cys Gln Leu Val Ala Asp Pro Cys Ala Ser Asn Pro Cys His His  
 95 100 105  
 Gly Asn Cys Ser Ser Ser Ser Ser Ser Ser Asp Gly Tyr Leu

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|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 110                                 | 115                     | 120 |
| Cys Ile Cys Asn Glu Gly Tyr Glu Gly | Pro Asn Cys Glu Gln Ala |     |
| 125                                 | 130                     | 135 |
| Leu Pro Ser Leu Pro Ala Thr Gly Trp | Thr Glu Ser Met Ala Pro |     |
| 140                                 | 145                     | 150 |
| Arg Gln Leu Gln Pro Val Pro Ala Thr | Gln Glu Pro Asp Lys Ile |     |
| 155                                 | 160                     | 165 |
| Leu Pro Arg Ser Gln Ala Thr Val Thr | Leu Pro Thr Trp Gln Pro |     |
| 170                                 | 175                     | 180 |
| Lys Thr Gly Gln Lys Val Val Glu Met | Lys Trp Asp Gln Val Glu |     |
| 185                                 | 190                     | 195 |
| Val Ile Pro Asp Ile Ala Cys Gly Asn | Ala Ser Ser Asn Ser Ser |     |
| 200                                 | 205                     | 210 |
| Ala Gly Gly Arg Leu Val Ser Phe Glu | Val Pro Gln Asn Thr Ser |     |
| 215                                 | 220                     | 225 |
| Val Lys Ile Arg Gln Asp Ala Thr Ala | Ser Leu Ile Leu Leu Trp |     |
| 230                                 | 235                     | 240 |
| Lys Val Thr Ala Thr Gly Phe Gln Gln | Cys Ser Leu Ile Asp Gly |     |
| 245                                 | 250                     | 255 |
| Arg Ser Val Thr Pro Leu Gln Ala Ser | Gly Gly Leu Val Leu Leu |     |
| 260                                 | 265                     | 270 |
| Glu Glu Met Leu Ala Leu Gly Asn Asn | His Phe Ile Gly Phe Val |     |
| 275                                 | 280                     | 285 |
| Asn Asp Ser Val Thr Lys Ser Ile Val | Ala Leu Arg Leu Thr Leu |     |
| 290                                 | 295                     | 300 |
| Val Val Lys Val Ser Thr Cys Val Pro | Gly Glu Ser His Ala Asn |     |
| 305                                 | 310                     | 315 |
| Asp Leu Glu Cys Ser Gly Lys Gly Lys | Cys Thr Thr Lys Pro Ser |     |
| 320                                 | 325                     | 330 |
| Glu Ala Thr Phe Ser Cys Thr Cys Glu | Glu Gln Tyr Val Gly Thr |     |
| 335                                 | 340                     | 345 |
| Phe Cys Glu Glu Tyr Asp Ala Cys Gln | Arg Lys Pro Cys Gln Asn |     |
| 350                                 | 355                     | 360 |
| Asn Ala Ser Cys Ile Asp Ala Asn Glu | Lys Gln Asp Gly Ser Asn |     |
| 365                                 | 370                     | 375 |
| Phe Thr Cys Val Cys Leu Pro Gly Tyr | Thr Gly Glu Leu Cys Gln |     |
| 380                                 | 385                     | 390 |
| Ser Lys Ile Asp Tyr Cys Ile Leu Asp | Pro Cys Arg Asn Gly Ala |     |
| 395                                 | 400                     | 405 |

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|                 |                     |                     |     |
|-----------------|---------------------|---------------------|-----|
| Thr Cys Ile Ser | Ser Leu Ser Gly Phe | Thr Cys Gln Cys Pro | Glu |
| 410             |                     | 415                 | 420 |
| Gly Tyr Phe Gly | Ser Ala Cys Glu Glu | Lys Val Asp Pro Cys | Ala |
| 425             |                     | 430                 | 435 |
| Ser Ser Pro Cys | Gln Asn Asn Gly Thr | Cys Tyr Val Asp Gly | Val |
| 440             |                     | 445                 | 450 |
| His Phe Thr Cys | Asn Cys Ser Pro Gly | Phe Thr Gly Pro Thr | Cys |
| 455             |                     | 460                 | 465 |
| Ala Gln Leu Ile | Asp Phe Cys Ala Leu | Ser Pro Cys Ala His | Gly |
| 470             |                     | 475                 | 480 |
| Thr Cys Arg Ser | Val Gly Thr Ser Tyr | Lys Cys Leu Cys Asp | Pro |
| 485             |                     | 490                 | 495 |
| Gly Tyr His Gly | Leu Tyr Cys Glu Glu | Glu Tyr Asn Glu Cys | Leu |
| 500             |                     | 505                 | 510 |
| Ser Ala Pro Cys | Leu Asn Ala Ala Thr | Cys Arg Asp Leu Val | Asn |
| 515             |                     | 520                 | 525 |
| Gly Tyr Glu Cys | Val Cys Leu Ala Glu | Tyr Lys Gly Thr His | Cys |
| 530             |                     | 535                 | 540 |
| Glu Leu Tyr Lys | Asp Pro Cys Ala Asn | Val Ser Cys Leu Asn | Gly |
| 545             |                     | 550                 | 555 |
| Ala Thr Cys Asp | Ser Asp Gly Leu Asn | Gly Thr Cys Ile Cys | Ala |
| 560             |                     | 565                 | 570 |
| Pro Gly Phe Thr | Gly Glu Glu Cys Asp | Ile Asp Ile Asn Glu | Cys |
| 575             |                     | 580                 | 585 |
| Asp Ser Asn Pro | Cys His His Gly Gly | Ser Cys Leu Asp Gln | Pro |
| 590             |                     | 595                 | 600 |
| Asn Gly Tyr Asn | Cys His Cys Pro His | Gly Trp Val Gly Ala | Asn |
| 605             |                     | 610                 | 615 |
| Cys Glu Ile His | Leu Gln Trp Lys Ser | Gly His Met Ala Glu | Ser |
| 620             |                     | 625                 | 630 |
| Leu Thr Asn Met | Pro Arg His Ser Leu | Tyr Ile Ile Ile Gly | Ala |
| 635             |                     | 640                 | 645 |
| Leu Cys Val Ala | Phe Ile Leu Met Leu | Ile Ile Leu Ile Val | Gly |
| 650             |                     | 655                 | 660 |
| Ile Cys Arg Ile | Ser Arg Ile Glu Tyr | Gln Gly Ser Ser Arg | Pro |
| 665             |                     | 670                 | 675 |
| Ala Tyr Glu Glu | Phe Tyr Asn Cys Arg | Ser Ile Asp Ser Glu | Phe |
| 680             |                     | 685                 | 690 |
| Ser Asn Ala Ile | Ala Ser Ile Arg His | Ala Arg Phe Gly Lys | Lys |

695

700

705

Ser Arg Pro Ala Met Tyr Asp Val Ser Pro Ile Ala Tyr Glu Asp  
 710 715 720

Tyr Ser Pro Asp Asp Lys Pro Leu Val Thr Leu Ile Lys Thr Lys  
 725 730 735

Asp Leu

<210> 16

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 16

tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 17

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 17

caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 18

<211> 508

<212> DNA

<213> Homo Sapien

<400> 18

ctctggaagg tcacggccac aggattccaa cagtgtctccc tcatagatgg 50

acgaaagtgt gacccccctt tcaggctttc aggggggactg gtcctcctgg 100

aggagatgct cgccttgggg aataatcact ttattggttt tgtgaatgat 150

tctgtgacta agtctattgt ggctttgcgc ttaactctgg tggatgaagg 200

cagcacctgt gtgccggggg agagtcacgc aaatgacttg gactgttcag 250

gaaaaggaaa atgcaccacg aagccgtcag aggcaacttt ttctgtgacc 300

tgtgaggagc agtacgtggg tactttctgt gaagaatacg atgcttgcca 350

gaggaaacct tgccaaaaca acgcgagctg tattgatgca aatgaaaagc 400

aagatgggag caatttcacc tgtgtttgcc ttctgggta tactggagag 450

ctttgccaac cgaactgaga ttggagcgaa cgacctacac cgaactgaga 500

taggggag 508

<210> 19  
<211> 508  
<212> DNA  
<213> Homo Sapien

<400> 19  
ctctggaagg tcacggccac aggattccaa cagtgtccc tcatagatgg 50  
acgaaagtgt gacccccctt tcaggctttc agggggactg gtcctcctgg 100  
aggagatgct cgccttgggg aataatcact ttattggttt tgtgaatgat 150  
tctgtgacta agtctattgt ggctttgcgc ttaactctgg tgggaaggt 200  
cagcacctgt gtgccggggg agagtcacgc aaatgacttg gagtggtcag 250  
gaaaaggaaa atgcaccacg aagccgtcag aggcaacttt ttctgtacc 300  
tgtgaggagc agtacgtggg tactttctgt gaagaatacg atgcttgcca 350  
gaggaaacct tgccaaaaca acgcgagctg tattgatgca aatgaaaagc 400  
aagatgggag caatttcacc tgtgtttgcc ttctgggta tactggagag 450  
ctttgccaac cgaactgaga ttggagcgaa cgacctacac cgaactgaga 500

taggggag 508

<210> 20  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 20  
ctctggaagg tcacggccac agg 23

<210> 21  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 21  
ctcagttcgg ttggcaaagc tctc 24

<210> 22  
<211> 69  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 22

cagtgtctccc tcatagatgg acgaaagtgt gacccccctt tcaggcgaga 50

gctttgccaa ccgaactga 69

<210> 23

<211> 1520

<212> DNA

<213> Homo Sapien

<400> 23

gctgagtctg ctgtctctgc tgctgtgtgt ccagcctgta acctgtgect 50

acaccacgcc agggcccccc agagccctca ccacgtggtg cgcccccaga 100

gcccacacca tgccgggcac ctacgtctcc tcgaccacac tcagtagtcc 150

cagcaccag ggctgcaag agcaggcacg ggccctgatg cgggacttcc 200

cgctcgtgga cggccacaac gacctgcccc tggctctaag gcaggtttac 250

cagaaagggc tacaggatgt taacctgcgc aatttcagct acggccagac 300

cagcctggac aggccttagag atggcctcgt gggcgcccag ttctggtcag 350

cctatgtgcc atgccagacc caggaccggg atgcctgcg cctcacctg 400

gagcagattg acctcatacg ccgcattgtg gcctctatt ctgagctgga 450

gcttgtgacc tcggctaaag ctctgaacga cactcagaaa ttggcctgcc 500

tcacgggtgt agaggggtggc cactcgtctg acaatagcct ctccatctta 550

cgtaccttct acatgtctggg agtgcgtctac ctgacgtca cccacacctg 600

caacacaccc tgggcagaga gctccgctaa gggcgccac tccttctaca 650

acaacatcag cgggctgact gactttggtg agaaggtggt ggcagaaatg 700

aaccgectgg gcatgatggt agacttatcc catgtctcag atgctgtggc 750

acggcggggc ctggaagtgt cacaggcacc tgtgatcttc tcccactcgg 800

ctgcccgggg tgtgtgcaac agtgctcgga atgttctga tgacatcctg 850

cagcttctga agaagaacgg tggcgtcgtg atggtgtctt tgtccatggg 900

agtaatacag tgcaaccat cagccaatgt gtccactgtg gcagatcact 950

tcgaccacat caaggctgtc attggatcca agttcatcgg gattggtgga 1000

gattatgatg gggccggcaa attccctcag gggctggaag acgtgtccac 1050

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agcttcaggg tgtccttcgt ggaaacctgc tgcgggtctt cagacaagtg 1150

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gaaaaggtac aggaagaaaa caaatggcaa agccccttgg aggacaagtt 1200  
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 gtcagagaca gagtctgact tcaggccagg aactcactga gattcccata 1300  
 cactggacag ccaagttacc agccaagtgg tcagtctcag agtcctcccc 1350  
 ccacatggcc ccagtccttg cagttgtggc caccttccca gtccttattc 1400  
 tgtggctctg atgaccagc tagtcctgcc agatgtcact gtagcaagcc 1450  
 acagacaccc cacaagttc ccctgtgtg caggcacaaa tatttctga 1500  
 aataaatgtt ttggacatag 1520

<210> 24  
 <211> 433  
 <212> PRT  
 <213> Homo Sapien

<400> 24  
 Met Pro Gly Thr Tyr Ala Pro Ser Thr Thr Leu Ser Ser Pro Ser  
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 20 25 30  
 Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu Arg Gln  
 35 40 45  
 Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser  
 50 55 60  
 Tyr Gly Gln Thr Ser Leu Asp Arg Leu Arg Asp Gly Leu Val Gly  
 65 70 75  
 Ala Gln Phe Trp Ser Ala Tyr Val Pro Cys Gln Thr Gln Asp Arg  
 80 85 90  
 Asp Ala Leu Arg Leu Thr Leu Glu Gln Ile Asp Leu Ile Arg Arg  
 95 100 105  
 Met Cys Ala Ser Tyr Ser Glu Leu Glu Leu Val Thr Ser Ala Lys  
 110 115 120  
 Ala Leu Asn Asp Thr Gln Lys Leu Ala Cys Leu Ile Gly Val Glu  
 125 130 135  
 Gly Gly His Ser Leu Asp Asn Ser Leu Ser Ile Leu Arg Thr Phe  
 140 145 150  
 Tyr Met Leu Gly Val Arg Tyr Leu Thr Leu Thr His Thr Cys Asn  
 155 160 165  
 Thr Pro Trp Ala Glu Ser Ser Ala Lys Gly Val His Ser Phe Tyr  
 170 175 180

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Asn | Ile | Ser | Gly | Leu | Thr | Asp | Phe | Gly | Glu | Lys | Val | Val | Ala | 185 | 190 | 195 |
| Glu | Met | Asn | Arg | Leu | Gly | Met | Met | Val | Asp | Leu | Ser | His | Val | Ser | 200 | 205 | 210 |
| Asp | Ala | Val | Ala | Arg | Arg | Ala | Leu | Glu | Val | Ser | Gln | Ala | Pro | Val | 215 | 220 | 225 |
| Ile | Phe | Ser | His | Ser | Ala | Ala | Arg | Gly | Val | Cys | Asn | Ser | Ala | Arg | 230 | 235 | 240 |
| Asn | Val | Pro | Asp | Asp | Ile | Leu | Gln | Leu | Leu | Lys | Lys | Asn | Gly | Gly | 245 | 250 | 255 |
| Val | Val | Met | Val | Ser | Leu | Ser | Met | Gly | Val | Ile | Gln | Cys | Asn | Pro | 260 | 265 | 270 |
| Ser | Ala | Asn | Val | Ser | Thr | Val | Ala | Asp | His | Phe | Asp | His | Ile | Lys | 275 | 280 | 285 |
| Ala | Val | Ile | Gly | Ser | Lys | Phe | Ile | Gly | Ile | Gly | Gly | Asp | Tyr | Asp | 290 | 295 | 300 |
| Gly | Ala | Gly | Lys | Phe | Pro | Gln | Gly | Leu | Glu | Asp | Val | Ser | Thr | Tyr | 305 | 310 | 315 |
| Pro | Val | Leu | Ile | Glu | Glu | Leu | Leu | Ser | Arg | Gly | Trp | Ser | Glu | Glu | 320 | 325 | 330 |
| Glu | Leu | Gln | Gly | Val | Leu | Arg | Gly | Asn | Leu | Leu | Arg | Val | Phe | Arg | 335 | 340 | 345 |
| Gln | Val | Glu | Lys | Val | Gln | Glu | Glu | Asn | Lys | Trp | Gln | Ser | Pro | Leu | 350 | 355 | 360 |
| Glu | Asp | Lys | Phe | Pro | Asp | Glu | Gln | Leu | Ser | Ser | Ser | Cys | His | Ser | 365 | 370 | 375 |
| Asp | Leu | Ser | Arg | Leu | Arg | Gln | Arg | Gln | Ser | Leu | Thr | Ser | Gly | Gln | 380 | 385 | 390 |
| Glu | Leu | Thr | Glu | Ile | Pro | Ile | His | Trp | Thr | Ala | Lys | Leu | Pro | Ala | 395 | 400 | 405 |
| Lys | Trp | Ser | Val | Ser | Glu | Ser | Ser | Pro | His | Met | Ala | Pro | Val | Leu | 410 | 415 | 420 |
| Ala | Val | Val | Ala | Thr | Phe | Pro | Val | Leu | Ile | Leu | Trp | Leu |     |     | 425 | 430 |     |

<210> 25

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 25  
agttctggtc agcctatgtg cc 22

<210> 26  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 26  
cgtgatggtg tctttgtcca tggg 24

<210> 27  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 27  
ctccaccaat cccgatgaac ttgg 24

<210> 28  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 28  
gagcagattg acctcatagc ccgcatgtgt gcctcctatt ctgagctgga 50

<210> 29  
<211> 1416  
<212> DNA  
<213> Homo Sapien

<400> 29  
aaaacctata aatattccgg attattcata ccgtcccacc atcgggcgcg 50  
gatccgcggc cgcgaattct aaaccaacat gccgggcacc tacgctccct 100  
cgaccacact cagtagtccc agcaccaggg gcctgcaaga gcaggcacgg 150  
gccctgatgc gggacttccc gctcgtggac ggccacaacg acctgcccct 200  
ggctctaagg caggtttacc agaaagggtt acaggatgtt aacctgcgca 250  
atttcagcta cggccagacc agcctggaca ggcttagaga tggcctcgtg 300  
ggcgcgccagt tctggtcagc ctatgtgcc a tgccagacc aggaccggga 350  
tgccctgcgc ctcacctgg agcagattga cctcatagc cgcattgtgtg 400

cctcctattc tgagctggag cttgtgacct cggctaaagc tctgaacgac 450  
 actcagaaat tggcctgcct catcggtgta gagggaggcc actcgctgga 500  
 caatagcctc tccatcttac gtaccttcta catgctggga gtgcgctacc 550  
 tgacgctcac ccacacctgc aacacacctt gggcagagag ctccgctaag 600  
 ggcgtccact ctttctacaa caacatcagc gggctgactg actttggtga 650  
 gaaggtggtg gcagaaatga accgcctggg catgatggta gacttatccc 700  
 atgtctcaga tgctgtggca cggcggggcc tggaagtgtc acaggcacct 750  
 gtgatcttct cccactcggc tgcccggggg gtgtgcaaca gtgctcggaa 800  
 tgttcctgat gacatcctgc agcttctgaa gaagaacggt ggcgtcgtga 850  
 tgggtgtcttt gtccatggga gtaatacagt gcaaccctac agccaatgtg 900  
 tccactgtgg cagatcactt cgaccacatc aaggctgtca ttggatccaa 950  
 gttcatcggg attggtggag attatgatgg ggcgggcaaa ttccctcagg 1000  
 ggctggaaga cgtgtccaca taccgggtcc tgatagagga gttgctgagt 1050  
 cgtggctgga gtgaggaaga gcttcagggt gtccttcgtg gaaacctgct 1100  
 gcgggtcttc agacaagtgg aaaaggtaca ggaagaaaac aaatggcaaa 1150  
 gcccttggga ggacaagttc cgggatgagc agctgagcag ttccctgccac 1200  
 tccgacctct cagctctgcg tcagagacag agtctgactt caggccagga 1250  
 actcactgag attcccatc actggacagc caagttacca gccaaagtgg 1300  
 cagtctcaga gtctctcccc caccctgaca aaactcacac atgcccaccg 1350  
 tgcccagcac ctgaactcct ggggggaccg tcagtcttcc tcttcccccc 1400  
 aaaaccaag gacacc 1416

<210> 30  
 <211> 446  
 <212> PRT  
 <213> Homo Sapien

<400> 30  
 Met Pro Gly Thr Tyr Ala Pro Ser Thr Thr Leu Ser Ser Pro Ser  
 1 5 10 15  
 Thr Gln Gly Leu Gln Glu Gln Ala Arg Ala Leu Met Arg Asp Phe  
 20 25 30  
 Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu Arg Gln  
 35 40 45  
 Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser

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|                 | 50      |                 | 55         |                 | 60      |
|-----------------|---------|-----------------|------------|-----------------|---------|
| Tyr Gly Gln Thr | Ser 65  | Leu Asp Arg     | Leu Arg 70 | Asp Gly Leu Val | Gly 75  |
| Ala Gln Phe Trp | Ser 80  | Ala Tyr Val     | Pro Cys 85 | Gln Thr Gln Asp | Arg 90  |
| Asp Ala Leu Arg | Leu 95  | Thr Leu Glu Gln | Ile 100    | Asp Leu Ile Arg | Arg 105 |
| Met Cys Ala Ser | Tyr 110 | Ser Glu Leu Glu | Leu 115    | Val Thr Ser Ala | Lys 120 |
| Ala Leu Asn Asp | Thr 125 | Gln Lys Leu Ala | Cys 130    | Leu Ile Gly Val | Glu 135 |
| Gly Gly His Ser | Leu 140 | Asp Asn Ser Leu | Ser 145    | Ile Leu Arg Thr | Phe 150 |
| Tyr Met Leu Gly | Val 155 | Arg Tyr Leu Thr | Leu 160    | Thr His Thr Cys | Asn 165 |
| Thr Pro Trp Ala | Glu 170 | Ser Ser Ala Lys | Gly 175    | Val His Ser Phe | Tyr 180 |
| Asn Asn Ile Ser | Gly 185 | Leu Thr Asp Phe | Gly 190    | Glu Lys Val Val | Ala 195 |
| Glu Met Asn Arg | Leu 200 | Gly Met Met Val | Asp 205    | Leu Ser His Val | Ser 210 |
| Asp Ala Val Ala | Arg 215 | Arg Ala Leu Glu | Val 220    | Ser Gln Ala Pro | Val 225 |
| Ile Phe Ser His | Ser 230 | Ala Ala Arg Gly | Val 235    | Cys Asn Ser Ala | Arg 240 |
| Asn Val Pro Asp | Asp 245 | Ile Leu Gln Leu | Leu 250    | Lys Lys Asn Gly | Gly 255 |
| Val Val Met Val | Ser 260 | Leu Ser Met Gly | Val 265    | Ile Gln Cys Asn | Pro 270 |
| Ser Ala Asn Val | Ser 275 | Thr Val Ala Asp | His 280    | Phe Asp His Ile | Lys 285 |
| Ala Val Ile Gly | Ser 290 | Lys Phe Ile Gly | Ile 295    | Gly Gly Asp Tyr | Asp 300 |
| Gly Ala Gly Lys | Phe 305 | Pro Gln Gly Leu | Glu 310    | Asp Val Ser Thr | Tyr 315 |
| Pro Val Leu Ile | Glu 320 | Glu Leu Leu Ser | Arg 325    | Gly Trp Ser Glu | Glu 330 |
| Glu Leu Gln Gly | Val 335 | Leu Arg Gly Asn | Leu 340    | Leu Arg Val Phe | Arg 345 |

|                 |                     |                     |     |
|-----------------|---------------------|---------------------|-----|
| Gln Val Glu Lys | Val Gln Glu Glu Asn | Lys Trp Gln Ser Pro | Leu |
| 350             |                     | 355                 | 360 |
| Glu Asp Lys Phe | Pro Asp Glu Gln Leu | Ser Ser Ser Cys His | Ser |
| 365             |                     | 370                 | 375 |
| Asp Leu Ser Arg | Leu Arg Gln Arg Gln | Ser Leu Thr Ser Gly | Gln |
| 380             |                     | 385                 | 390 |
| Glu Leu Thr Glu | Ile Pro Ile His Trp | Thr Ala Lys Leu Pro | Ala |
| 395             |                     | 400                 | 405 |
| Lys Trp Ser Val | Ser Glu Ser Ser Pro | His Pro Asp Lys Thr | His |
| 410             |                     | 415                 | 420 |
| Thr Cys Pro Pro | Cys Pro Ala Pro Glu | Leu Leu Gly Gly Pro | Ser |
| 425             |                     | 430                 | 435 |
| Val Phe Leu Phe | Pro Pro Lys Pro Lys | Asp Thr             |     |
| 440             |                     | 445                 |     |

<210> 31  
 <211> 1790  
 <212> DNA  
 <213> Homo Sapien

<400> 31  
 cgcccagcga cgtgcgggag gacctggccc cgccctccc cgcccgccct 50  
 gcgtcccgcg ccttgcgcca ccgcgcgcga gccgcagccc gccgcgcgcc 100  
 cccggcagcg ccggccccat gccgcgcggc cgccggggcc ccgcgcgcca 150  
 atccgcgcgg cgggcgcgcg cgttgcgtgc cctgcgtgctg ctgctctgcg 200  
 tcctcggggc gccgcgagcc ggatcaggag ccacacacag tgtgatcagt 250  
 ccccaggatc ccacgcttct catcggtctc tccctgctgg ccacctgctc 300  
 agtgcacgga gaccacaccag gaggcaccgc cgagggcctc tactggaccc 350  
 tcaacggggc ccgcctgccc cctgagctct cccgtgtact caacgcctcc 400  
 accttggtc tggccctggc caacctcaat gggtcaggc agcggtcggg 450  
 ggacaacctc gtgtgccacg ccggtgacgg cagcatcctg gctggctcct 500  
 gcctctatgt tggcctgccc ccagagaaac ccgtcaacat cagctgctgg 550  
 tccaagaaca tgaaggactt gacctgccgc tggacgccag gggcccacgg 600  
 ggagaccttc ctccacacca actactccct caagtacaag cttaggtggg 650  
 atggccagga caacacatgt gaggagtacc acacagtggg gcccactcc 700  
 tgccacatcc ccaaggacct ggctctcttt acgccctatg agatctgggt 750  
 ggaggccacc aaccgcctgg gctctgcccg ctccgatgta ctcacgctgg 800

atatactgga tgtggtgacc acggaccccc cgcccgcagt gcacgtgagc 850  
 cgcgtcgggg gcctggagga ccagctgagc gtgcgctggg tgcgccacc 900  
 cgccctcaag gatttctctt ttcaagccaa ataccagatc cgctaccgag 950  
 tggaggacag tgtggactgg aaggtggtgg acgatgtgag caaccagacc 1000  
 tcctgccgcc tggccggcct gaaacccggc accgtgtact tcgtgcaagt 1050  
 gcgctgcaac ccctttggca tctatggctc caagaaagcc gggatctgga 1100  
 gtgagtggag ccaccccaca gccgcctcca ctccccgcag tgagcgcccg 1150  
 ggcccggggc gcggggcggt cgaaccgcgg ggcggagagc cgagctcggg 1200  
 gccggtgcgg cgcgagctca agcagttcct gggctggctc aagaagcacg 1250  
 cgtactgctc caacctcagc ttccgcctct acgaccagtg gcgagcctgg 1300  
 atgcagaagt cgcacaagac ccgcaaccag gacgagggga tcctgccctc 1350  
 gggcagacgg ggcacggcga gaggtcctgc cagataagct gtaggggctc 1400  
 aggccaccct ccctgccacg tggagacgca gaggccgaac ccaaactggg 1450  
 gccacctctg taccctcact tcagggcacc tgagccaccc tcagcaggag 1500  
 ctgggggtggc ccctgagctc caacggccat aacagctctg actcccacgt 1550  
 gaggccacct ttgggtgcac ccagtgggg gtgtgtgtgt gtgtgagggt 1600  
 tggttgagtt gcctagaacc cctgccaggg ctgggggtga gaaggggagt 1650  
 cattactccc cattacctag ggccccctca aaagagtcct tttaaataaa 1700  
 tgagctatth aggtgctgtg attgtgaaaa aaaaaaaaaa aaaaaaaaaa 1750  
 aaaaaaaaaa aaaaaaaaaa aaaaacaaaa aaaaaaaaaa 1790

<210> 32  
 <211> 422  
 <212> PRT  
 <213> Homo Sapien

<400> 32  
 Met Pro Ala Gly Arg Arg Gly Pro Ala Ala Gln Ser Ala Arg Arg  
 1 5 10 15  
 Pro Pro Pro Leu Leu Pro Leu Leu Leu Leu Cys Val Leu Gly  
 20 25 30  
 Ala Pro Arg Ala Gly Ser Gly Ala His Thr Ala Val Ile Ser Pro  
 35 40 45  
 Gln Asp Pro Thr Leu Leu Ile Gly Ser Ser Leu Leu Ala Thr Cys  
 50 55 60

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Ser | Val | His | Gly | Asp | Pro | Pro | Gly | Ala | Thr | Ala | Glu | Gly | Leu | Tyr |  |  |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |  |  |
| Trp | Thr | Leu | Asn | Gly | Arg | Arg | Leu | Pro | Pro | Glu | Leu | Ser | Arg | Val |  |  |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |  |  |
| Leu | Asn | Ala | Ser | Thr | Leu | Ala | Leu | Ala | Leu | Ala | Asn | Leu | Asn | Gly |  |  |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |  |  |
| Ser | Arg | Gln | Arg | Ser | Gly | Asp | Asn | Leu | Val | Cys | His | Ala | Arg | Asp |  |  |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |  |  |
| Gly | Ser | Ile | Leu | Ala | Gly | Ser | Cys | Leu | Tyr | Val | Gly | Leu | Pro | Pro |  |  |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |  |  |
| Glu | Lys | Pro | Val | Asn | Ile | Ser | Cys | Trp | Ser | Lys | Asn | Met | Lys | Asp |  |  |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |  |  |
| Leu | Thr | Cys | Arg | Trp | Thr | Pro | Gly | Ala | His | Gly | Glu | Thr | Phe | Leu |  |  |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |  |  |
| His | Thr | Asn | Tyr | Ser | Leu | Lys | Tyr | Lys | Leu | Arg | Trp | Tyr | Gly | Gln |  |  |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |  |  |
| Asp | Asn | Thr | Cys | Glu | Glu | Tyr | His | Thr | Val | Gly | Pro | His | Ser | Cys |  |  |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |  |  |
| His | Ile | Pro | Lys | Asp | Leu | Ala | Leu | Phe | Thr | Pro | Tyr | Glu | Ile | Trp |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |  |  |
| Val | Glu | Ala | Thr | Asn | Arg | Leu | Gly | Ser | Ala | Arg | Ser | Asp | Val | Leu |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |  |  |
| Thr | Leu | Asp | Ile | Leu | Asp | Val | Val | Thr | Thr | Asp | Pro | Pro | Pro | Asp |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |
| Val | His | Val | Ser | Arg | Val | Gly | Gly | Leu | Glu | Asp | Gln | Leu | Ser | Val |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |  |  |
| Arg | Trp | Val | Ser | Pro | Pro | Ala | Leu | Lys | Asp | Phe | Leu | Phe | Gln | Ala |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |  |  |
| Lys | Tyr | Gln | Ile | Arg | Tyr | Arg | Val | Glu | Asp | Ser | Val | Asp | Trp | Lys |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |  |  |
| Val | Val | Asp | Asp | Val | Ser | Asn | Gln | Thr | Ser | Cys | Arg | Leu | Ala | Gly |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |  |  |
| Leu | Lys | Pro | Gly | Thr | Val | Tyr | Phe | Val | Gln | Val | Arg | Cys | Asn | Pro |  |  |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |  |  |
| Phe | Gly | Ile | Tyr | Gly | Ser | Lys | Lys | Ala | Gly | Ile | Trp | Ser | Glu | Trp |  |  |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |  |  |
| Ser | His | Pro | Thr | Ala | Ala | Ser | Thr | Pro | Arg | Ser | Glu | Arg | Pro | Gly |  |  |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |  |  |
| Pro | Gly | Gly | Gly | Ala | Cys | Glu | Pro | Arg | Gly | Gly | Glu | Pro | Ser | Ser |  |  |  |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 350                                 | 355                     | 360 |
| Gly Pro Val Arg Arg Glu Leu Lys Gln | Phe Leu Gly Trp Leu Lys |     |
| 365                                 | 370                     | 375 |
| Lys His Ala Tyr Cys Ser Asn Leu Ser | Phe Arg Leu Tyr Asp Gln |     |
| 380                                 | 385                     | 390 |
| Trp Arg Ala Trp Met Gln Lys Ser His | Lys Thr Arg Asn Gln Asp |     |
| 395                                 | 400                     | 405 |
| Glu Gly Ile Leu Pro Ser Gly Arg Arg | Gly Thr Ala Arg Gly Pro |     |
| 410                                 | 415                     | 420 |

Ala Arg

<210> 33  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 33  
 cccgcccgac gtgcacgtga gcc 23

<210> 34  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 34  
 tgagccagcc caggaactgc ttg 23

<210> 35  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 35  
 caagtgcgct gcaaccctt tggcatctat ggctccaaga aagccgggat 50

<210> 36  
 <211> 1771  
 <212> DNA  
 <213> Homo Sapien

<400> 36  
 cccacgcgtc cgctggtgtt agatcgagca accctctaaa agcagtttag 50



agtggtaaaa aaaaaaaaaa acacacccaaa cgctcgcagc cacaaaaggg 100  
 atgaaatttc ttctggacat cctcctgctt ctcccgttac tgategtctg 150  
 ctccctagag tccttcgtga agctttttat tcctaagagg agaaaatcag 200  
 tcaccggcga aatcgtgctg attacaggag ctgggcacatg aattgggaga 250  
 ctgactgcct atgaatttgc taaacttaaa agcaagctgg ttctctggga 300  
 tataaataag catggactgg aggaaacagc tgccaaatgc aagggactgg 350  
 gtgccaaggt tcataccttt gtggtagact gcagcaaccg agaagatatt 400  
 tacagctctg caaagaaggt gaaggcagaa attggagatg ttagtatttt 450  
 agtaaataat gctggtgtag tctatacatc agatttggtt gctacacaag 500  
 atcctcagat tgaaaagact tttgaagtta atgtacttgc acatttctgg 550  
 actacaaagg catttcttcc tgcaatgacg aagaataacc atggccatat 600  
 tgtcactgtg gcttcggcag ctggacatgt ctcggtcccc ttcttactgg 650  
 cttactgttc aagcaagttt gctgctgttg gatttcataa aactttgaca 700  
 gatgaactgg ctgccttaca aataactgga gtcaaaacaa catgtctgtg 750  
 tcctaatttc gtaaacactg gcttcatcaa aaatccaagt acaagtttgg 800  
 gaccactctt ggaacctgag gaagtggtaa acaggctgat gcatgggatt 850  
 ctgactgagc agaagatgat ttttattcca tcttctatag cttttttaac 900  
 aacattggaa aggatccttc ctgagcggtt cctggcagtt ttaaaacgaa 950  
 aaatcagtgt taagtttgat gcagttattg gatataaaat gaaagcgcaa 1000  
 taagcaccta gttttctgaa aactgattta ccaggtttag gttgatgtca 1050  
 tctaatagtg ccagaatttt aatgtttgaa cttctgtttt ttctaattat 1100  
 cccattttct tcaatatcat ttttgaggct ttggcagctc tcatttacta 1150  
 ccacttggtc tttagccaaa agctgattac atatgatata aacagagaaa 1200  
 tacctttaga ggtgacttta aggaaaatga agaaaaagaa ccaaatgac 1250  
 tttattaaaa taatttccaa gattatttgt ggctcacctg aaggctttgc 1300  
 aaaatttgta ccataaccgt ttatttaaca tatattttta tttttgattg 1350  
 cacttaaatt ttgtataatt tgtgtttcct tttctgttct acataaaatc 1400  
 agaaacttca agctctctaa ataaaatgaa ggactatata tagtggtatt 1450  
 tcacaatgaa tatcatgaac tctcaatggg taggtttcat cctacccatt 1500

gccactctgt ttctgagag atacctcaca ttccaatgcc aaacatttct 1550  
gcacagggaa gctagaggtg gatacacgtg ttgcaagtat aaaagcatca 1600  
ctgggattta aggagaattg agagaatgta cccacaaatg gcagcaataa 1650  
taaatggatc acacttaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1700  
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1750  
aaaaaaaaaa aaaaaaaaaa a 1771

<210> 37  
<211> 300  
<212> PRT  
<213> Homo Sapien

<400> 37

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Lys | Phe | Leu | Leu | Asp | Ile | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Ile | 1   | 5   | 10  | 15 |
| Val | Cys | Ser | Leu | Glu | Ser | Phe | Val | Lys | Leu | Phe | Ile | Pro | Lys | Arg | 20  | 25  | 30  |    |
| Arg | Lys | Ser | Val | Thr | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly | 35  | 40  | 45  |    |
| His | Gly | Ile | Gly | Arg | Leu | Thr | Ala | Tyr | Glu | Phe | Ala | Lys | Leu | Lys | 50  | 55  | 60  |    |
| Ser | Lys | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | His | Gly | Leu | Glu | Glu | 65  | 70  | 75  |    |
| Thr | Ala | Ala | Lys | Cys | Lys | Gly | Leu | Gly | Ala | Lys | Val | His | Thr | Phe | 80  | 85  | 90  |    |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Asp | Ile | Tyr | Ser | Ser | Ala | Lys | 95  | 100 | 105 |    |
| Lys | Val | Lys | Ala | Glu | Ile | Gly | Asp | Val | Ser | Ile | Leu | Val | Asn | Asn | 110 | 115 | 120 |    |
| Ala | Gly | Val | Val | Tyr | Thr | Ser | Asp | Leu | Phe | Ala | Thr | Gln | Asp | Pro | 125 | 130 | 135 |    |
| Gln | Ile | Glu | Lys | Thr | Phe | Glu | Val | Asn | Val | Leu | Ala | His | Phe | Trp | 140 | 145 | 150 |    |
| Thr | Thr | Lys | Ala | Phe | Leu | Pro | Ala | Met | Thr | Lys | Asn | Asn | His | Gly | 155 | 160 | 165 |    |
| His | Ile | Val | Thr | Val | Ala | Ser | Ala | Ala | Gly | His | Val | Ser | Val | Pro | 170 | 175 | 180 |    |
| Phe | Leu | Leu | Ala | Tyr | Cys | Ser | Ser | Lys | Phe | Ala | Ala | Val | Gly | Phe | 185 | 190 | 195 |    |
| His | Lys | Thr | Leu | Thr | Asp | Glu | Leu | Ala | Ala | Leu | Gln | Ile | Thr | Gly |     |     |     |    |

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|   |     |     |
|---|-----|-----|
| 200   | 205 | 210 |
| Val Lys Thr Thr Cys Leu Cys Pro Asn Phe Val Asn Thr Gly Phe |     |     |
| 215   | 220 | 225 |
| Ile Lys Asn Pro Ser Thr Ser Leu Gly Pro Thr Leu Glu Pro Glu |     |     |
| 230   | 235 | 240 |
| Glu Val Val Asn Arg Leu Met His Gly Ile Leu Thr Glu Gln Lys |     |     |
| 245   | 250 | 255 |
| Met Ile Phe Ile Pro Ser Ser Ile Ala Phe Leu Thr Thr Leu Glu |     |     |
| 260   | 265 | 270 |
| Arg Ile Leu Pro Glu Arg Phe Leu Ala Val Leu Lys Arg Lys Ile |     |     |
| 275   | 280 | 285 |
| Ser Val Lys Phe Asp Ala Val Ile Gly Tyr Lys Met Lys Ala Gln |     |     |
| 290   | 295 | 300 |

<210> 38  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 38  
 ggtgaaggca gaaattggag atg 23

<210> 39  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 39  
 atcccatgca tcagcctggt tacc 24

<210> 40  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 40  
 gctgggtgtag tctatacatc agatttggtt gctacacaag atcctcag 48

<210> 41  
 <211> 1377  
 <212> DNA  
 <213> Homo Sapien

09943780-033001

<400> 41

gactagttct cttggagtct gggaggagga aagcggagcc ggcagggagc 50  
gaaccaggac tggggtgacg gcagggcagg gggcgcttg cgggggagaa 100  
gcgcgggggc tggagcacca ccaactggag ggtccggagt agcgagcgcc 150  
ccgaaggagg ccatcgggga gccgggaggg gggactgcga gaggaccccg 200  
gcgtccgggc tcccgggtgcc agcgctatga ggccactcct cgtcctgctg 250  
ctcctggggc tggcgcccg ctcgccccca ctggacgaca acaagatccc 300  
cagcctctgc ccggggcacc ccggccttcc aggcacgccg ggccaccatg 350  
gcagccaggg cttgccgggc cgcgatggcc gcgacggccg cgacggcgcg 400  
cccggggctc cgggagagaa aggcgagggc gggaggcccg gactgccggg 450  
acctcgaggg gaccccgggc cgcgaggaga ggcgggaccc gcggggccca 500  
cggggcctgc cggggagtgc tccgtgcctc cgcgatccgc cttcagcgcc 550  
aagcgctccg agagccgggt gcctccgccg tctgacgcac ccttgccctt 600  
cgaccgcgtg ctggtgaacg agcagggaca ttacgacgcc gtcaccggca 650  
agttcacctg ccagggtgcct ggggtctact acttcgccgt ccatgccacc 700  
gtctaccggg ccagcctgca gtttgatctg gtgaagaatg gcgaatccat 750  
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cggggggggc catggtgagg ctggagcctg aggaccaagt gtgggtgcag 850  
gtgggtgtgg gtgactacat tggcatctat gccagcatca agacagacag 900  
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ttgcttagtg cccactgcaa agtgagctca tgctctcact cctagaagga 1000  
gggtgtgagg ctgacaacca ggtcatccag gagggctggc cccctggaa 1050  
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ggcaaggaat gggaacagtg gctgtctgcg atcaggctctg gcagcatggg 1150  
gcagtggctg gatttctgcc caagaccaga ggagtgtgct gtgctggcaa 1200  
gtgtaagtcc ccagttgct ctggtccagg agcccacggg ggggtgctct 1250  
cttctggtc ctctgcttct ctggatcctc cccacccct cctgctcctg 1300  
gggcggccc ttttctcaga gatcactcaa taaacctaag aaccctcata 1350  
aaaaaaaaa aaaaaaaaaa aaaaaa 1377

<210> 42

<211> 243  
 <212> PRT  
 <213> Homo Sapien

<400> 42

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Pro | Leu | Leu | Val | Leu | Leu | Leu | Leu | Gly | Leu | Ala | Ala | Gly | 1   | 5   | 10  | 15 |
| Ser | Pro | Pro | Leu | Asp | Asp | Asn | Lys | Ile | Pro | Ser | Leu | Cys | Pro | Gly | 20  | 25  | 30  |    |
| His | Pro | Gly | Leu | Pro | Gly | Thr | Pro | Gly | His | His | Gly | Ser | Gln | Gly | 35  | 40  | 45  |    |
| Leu | Pro | Gly | Arg | Asp | Gly | Arg | Asp | Gly | Arg | Asp | Gly | Ala | Pro | Gly | 50  | 55  | 60  |    |
| Ala | Pro | Gly | Glu | Lys | Gly | Glu | Gly | Gly | Arg | Pro | Gly | Leu | Pro | Gly | 65  | 70  | 75  |    |
| Pro | Arg | Gly | Asp | Pro | Gly | Pro | Arg | Gly | Glu | Ala | Gly | Pro | Ala | Gly | 80  | 85  | 90  |    |
| Pro | Thr | Gly | Pro | Ala | Gly | Glu | Cys | Ser | Val | Pro | Pro | Arg | Ser | Ala | 95  | 100 | 105 |    |
| Phe | Ser | Ala | Lys | Arg | Ser | Glu | Ser | Arg | Val | Pro | Pro | Pro | Ser | Asp | 110 | 115 | 120 |    |
| Ala | Pro | Leu | Pro | Phe | Asp | Arg | Val | Leu | Val | Asn | Glu | Gln | Gly | His | 125 | 130 | 135 |    |
| Tyr | Asp | Ala | Val | Thr | Gly | Lys | Phe | Thr | Cys | Gln | Val | Pro | Gly | Val | 140 | 145 | 150 |    |
| Tyr | Tyr | Phe | Ala | Val | His | Ala | Thr | Val | Tyr | Arg | Ala | Ser | Leu | Gln | 155 | 160 | 165 |    |
| Phe | Asp | Leu | Val | Lys | Asn | Gly | Glu | Ser | Ile | Ala | Ser | Phe | Phe | Gln | 170 | 175 | 180 |    |
| Phe | Phe | Gly | Gly | Trp | Pro | Lys | Pro | Ala | Ser | Leu | Ser | Gly | Gly | Ala | 185 | 190 | 195 |    |
| Met | Val | Arg | Leu | Glu | Pro | Glu | Asp | Gln | Val | Trp | Val | Gln | Val | Gly | 200 | 205 | 210 |    |
| Val | Gly | Asp | Tyr | Ile | Gly | Ile | Tyr | Ala | Ser | Ile | Lys | Thr | Asp | Ser | 215 | 220 | 225 |    |
| Thr | Phe | Ser | Gly | Phe | Leu | Val | Tyr | Ser | Asp | Trp | His | Ser | Ser | Pro | 230 | 235 | 240 |    |
| Val | Phe | Ala |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |

<210> 43  
 <211> 24

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<220>

<223> Synthetic oligonucleotide probe

<400> 48

ggagcaccac caactggagg gtccggagta gcgagcgccc cgaag 45

<210> 49

<211> 1876

<212> DNA

<213> Homo Sapien

<400> 49

ctcttttgtc caccagccca gcctgactcc tggagattgt gaatagctcc 50

atccagcctg agaaacaagc cgggtggctg agccaggctg tgcacggagc 100

acctgacggg cccaacagac ccatgctgca tccagagacc tcccctggcc 150

gggggcatct cctggctgtg ctcttggccc tcttggcac cacctgggca 200

gaggtgtggc caccacagct gcaggagcag gctccgatgg ccggagccct 250

gaacaggaag gagagtttct tgctcctctc cctgcacaac cgcttgcgca 300

gctgggtcca gccccctgcg gctgacatgc ggaggctgga ctggagtgc 350

agcctggccc aactggctca agccagggca gccctctgtg gaatcccaac 400

cccgagcctg gcatccggcc tgtggcgcac cctgcaagtg ggctggaaca 450

tgcagctgct gcccgcgggc ttggcgctct ttgttgaagt ggtcagccta 500

tggtttgcag aggggcagcg gtacagccac gcggcaggag agtgtgctcg 550

caacgccacc tgcacccact acacgcagct cgtgtgggccc acctcaagcc 600

agctgggctg tgggcggcac ctgtgctctg caggccagac agcgatagaa 650

gcctttgtct gtgcctactc ccccgaggc aactgggagg tcaacgggaa 700

gacaatcatc ccctataaga aggggtgcctg gtgttcgctc tgcacagcca 750

gtgtctcagg ctgcttcaaa gcctgggacc atgcaggggg gctctgtgag 800

gtccccagga atccttgtcg catgagctgc cagaaccatg gacgtctcaa 850

catcagcacc tgccactgcc actgtcccc tggctacacg ggcagatact 900

gccaagtgcg gtgcagcctg cagtgtgtgc acggccgggt ccgggaggag 950

gagtgtcgt gcgtctgtga catcggctac gggggagccc agtgtgccac 1000

caagggtgcat ttcccttcc acacctgtga cctgaggatc gacggagact 1050

gcttcatggt gtcttcagag gcagacacct attacagagc caggatgaaa 1100

tgtcagagga aaggcggggt gctggcccc atcaagagcc agaaagtgc 1150

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Val Trp Leu Ser Ala Ala Met Gly Phe Gly Asn Cys Val Glu Leu  
410 415 420

Gln Ala Ser Ala Ala Phe Asn Trp Asn Asp Gln Arg Cys Lys Thr  
425 430 435

Arg Asn Arg Tyr Ile Cys Gln Phe Ala Gln Glu His Ile Ser Arg  
440 445 450

Trp Gly Pro Gly Ser  
455

<210> 51  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 51  
aggaacttct ggatcgggct cacc 24

<210> 52  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 52  
gggtctgggc caggtggaag agag 24

<210> 53  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 53  
gccaaggact ccttccgctg ggccacaggg gagcaccagg ccttc 45

<210> 54  
<211> 2331  
<212> DNA  
<213> Homo Sapien

<400> 54  
cggacgcgtg ggctgggcgc tgcaaagcgt gtcccgcggg gtccccgagc 50  
gtcccgcgcc ctgcgccgc catgctcctg ctgctggggc tgtgcctggg 100  
gctgtccctg tgtgtggggg cgcaggaaga ggcgcagagc tggggccact 150  
cttcggagca ggatggactc aggggtcccga ggcaagtcag actgttgagc 200

aggctgaaaa ccaaaccctt gatgacagaa ttctcagtga agtctaccat 250  
catttcccgt tatgccttca ctacggtttc ctgcagaatg ctgaacagag 300  
cttctgaaga ccaggacatt gagttccaga tgcagattcc agctgcagct 350  
ttcatcacca acttcactat gcttattgga gacaagggtgt atcagggcga 400  
aattacagag agagaaaaga agagtgggtga tagggtaaaa gagaaaagga 450  
ataaaaccac agaagaaaat ggagagaagg ggactgaaat attcagagct 500  
tctgcagtga ttcccagcaa ggacaaagcc gcctttttcc tgagttatga 550  
ggagcttctg cagaggcgcc tgggcaagta cgagcacagc atcagcgtgc 600  
ggccccagca gctgtccggg aggctgagcg tggacgtgaa tatcctggag 650  
agcgcgggca tgcctccct ggaggtgctg ccgcttcaca acagcaggca 700  
gaggggcagt gggcgcgggg aagatgattc tgggcctccc ccatctactg 750  
tcattaacca aaatgaaaca ttgccaaca taatttttaa acctactgta 800  
gtacaacaag ccaggattgc ccagaatgga attttgggag actttatcat 850  
tagatatgac gtcaatagag aacagagcat tggggacatc caggttctaa 900  
atggctatct tgtgcactac ttgtctcta aagaccttc tcttttacc 950  
aagaatgtgg tattcgtgct tgacagcagt gcttctatgg tgggaaccaa 1000  
actccggcag accaaggatg cctctctcac aattctccat gacctccgac 1050  
cccaggaccg ttccagtatc attggatttt ccaaccggat caaagtatgg 1100  
aaggaccact tgatatcagt cactccagac agcatcaggg atgggaaagt 1150  
gtacattcac catatgtcac ccactggagg cacagacatc aacggggccc 1200  
tgcagagggc catcaggctc ctcaacaagt acgtggccca cagtggcatt 1250  
ggagaccgga gcgtgtccct catcgtcttc ctgacggatg ggaagccac 1300  
ggtcggggag acgcacaccc tcaagatcct caacaacacc cgagaggccg 1350  
cccagggcca agtctgcac ttaccattg gcacggcaa cgacgtggac 1400  
ttcaggctgc tggagaaact gtcgctggag aactgtggcc tcacacggcg 1450  
cgtgcacgag gaggaggacg caggctcgca gctcatcggg ttctacgatg 1500  
aaatcaggac cccgtctctc tctgacatcc gcacgatta tccccccagc 1550  
tcagtgggtgc aggccaccaa gacctgttc cccaactact tcaacggctc 1600  
ggagatcatc attgcgggga agctgggtgga caggaagctg gatcacctgc 1650



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|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Arg Val Lys Glu | Lys Arg Asn Lys Thr | Thr Glu Glu Asn Gly Glu | 125 | 130 | 135 |
| Lys Gly Thr Glu | Ile Phe Arg Ala Ser | Ala Val Ile Pro Ser Lys | 140 | 145 | 150 |
| Asp Lys Ala Ala | Phe Phe Leu Ser Tyr | Glu Glu Leu Leu Gln Arg | 155 | 160 | 165 |
| Arg Leu Gly Lys | Tyr Glu His Ser Ile | Ser Val Arg Pro Gln Gln | 170 | 175 | 180 |
| Leu Ser Gly Arg | Leu Ser Val Asp Val | Asn Ile Leu Glu Ser Ala | 185 | 190 | 195 |
| Gly Ile Ala Ser | Leu Glu Val Leu Pro | Leu His Asn Ser Arg Gln | 200 | 205 | 210 |
| Arg Gly Ser Gly | Arg Gly Glu Asp Asp | Ser Gly Pro Pro Pro Ser | 215 | 220 | 225 |
| Thr Val Ile Asn | Gln Asn Glu Thr Phe | Ala Asn Ile Ile Phe Lys | 230 | 235 | 240 |
| Pro Thr Val Val | Gln Gln Ala Arg Ile | Ala Gln Asn Gly Ile Leu | 245 | 250 | 255 |
| Gly Asp Phe Ile | Ile Arg Tyr Asp Val | Asn Arg Glu Gln Ser Ile | 260 | 265 | 270 |
| Gly Asp Ile Gln | Val Leu Asn Gly Tyr | Phe Val His Tyr Phe Ala | 275 | 280 | 285 |
| Pro Lys Asp Leu | Pro Pro Leu Pro Lys | Asn Val Val Phe Val Leu | 290 | 295 | 300 |
| Asp Ser Ser Ala | Ser Met Val Gly Thr | Lys Leu Arg Gln Thr Lys | 305 | 310 | 315 |
| Asp Ala Leu Phe | Thr Ile Leu His Asp | Leu Arg Pro Gln Asp Arg | 320 | 325 | 330 |
| Phe Ser Ile Ile | Gly Phe Ser Asn Arg | Ile Lys Val Trp Lys Asp | 335 | 340 | 345 |
| His Leu Ile Ser | Val Thr Pro Asp Ser | Ile Arg Asp Gly Lys Val | 350 | 355 | 360 |
| Tyr Ile His His | Met Ser Pro Thr Gly | Gly Thr Asp Ile Asn Gly | 365 | 370 | 375 |
| Ala Leu Gln Arg | Ala Ile Arg Leu Leu | Asn Lys Tyr Val Ala His | 380 | 385 | 390 |
| Ser Gly Ile Gly | Asp Arg Ser Val Ser | Leu Ile Val Phe Leu Thr | 395 | 400 | 405 |
| Asp Gly Lys Pro | Thr Val Gly Glu Thr | His Thr Leu Lys Ile Leu |     |     |     |

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|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 410                                 | 415                     | 420 |
| Asn Asn Thr Arg Glu Ala Ala Arg Gly | Gln Val Cys Ile Phe Thr |     |
| 425                                 | 430                     | 435 |
| Ile Gly Ile Gly Asn Asp Val Asp Phe | Arg Leu Leu Glu Lys Leu |     |
| 440                                 | 445                     | 450 |
| Ser Leu Glu Asn Cys Gly Leu Thr Arg | Arg Val His Glu Glu Glu |     |
| 455                                 | 460                     | 465 |
| Asp Ala Gly Ser Gln Leu Ile Gly Phe | Tyr Asp Glu Ile Arg Thr |     |
| 470                                 | 475                     | 480 |
| Pro Leu Leu Ser Asp Ile Arg Ile Asp | Tyr Pro Pro Ser Ser Val |     |
| 485                                 | 490                     | 495 |
| Val Gln Ala Thr Lys Thr Leu Phe Pro | Asn Tyr Phe Asn Gly Ser |     |
| 500                                 | 505                     | 510 |
| Glu Ile Ile Ile Ala Gly Lys Leu Val | Asp Arg Lys Leu Asp His |     |
| 515                                 | 520                     | 525 |
| Leu His Val Glu Val Thr Ala Ser Asn | Ser Lys Lys Phe Ile Ile |     |
| 530                                 | 535                     | 540 |
| Leu Lys Thr Asp Val Pro Val Arg Pro | Gln Lys Ala Gly Lys Asp |     |
| 545                                 | 550                     | 555 |
| Val Thr Gly Ser Pro Arg Pro Gly Gly | Asp Gly Glu Gly Asp Thr |     |
| 560                                 | 565                     | 570 |
| Asn His Ile Glu Arg Leu Trp Ser Tyr | Leu Thr Thr Lys Glu Leu |     |
| 575                                 | 580                     | 585 |
| Leu Ser Ser Trp Leu Gln Ser Asp Asp | Glu Pro Glu Lys Glu Arg |     |
| 590                                 | 595                     | 600 |
| Leu Arg Gln Arg Ala Gln Ala Leu Ala | Val Ser Tyr Arg Phe Leu |     |
| 605                                 | 610                     | 615 |
| Thr Pro Phe Thr Ser Met Lys Leu Arg | Gly Pro Val Pro Arg Met |     |
| 620                                 | 625                     | 630 |
| Asp Gly Leu-Glu Glu Ala His Gly Met | Ser Ala Ala Met Gly Pro |     |
| 635                                 | 640                     | 645 |
| Glu Pro Val Val Gln Ser Val Arg Gly | Ala Gly Thr Gln Pro Gly |     |
| 650                                 | 655                     | 660 |
| Pro Leu Leu Lys Lys Pro Asn Ser Val | Lys Lys Lys Gln Asn Lys |     |
| 665                                 | 670                     | 675 |
| Thr Lys Lys Arg His Gly Arg Asp Gly | Val Phe Pro Leu His His |     |
| 680                                 | 685                     | 690 |
| Leu Gly Ile Arg                     |                         |     |

<210> 56  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 56  
gtgggaacca aactccggca gacc 24

<210> 57  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 57  
cacatcgagc gtctctgg 18

<210> 58  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 58  
agccgctcct tctccggttc atcg 24

<210> 59  
<211> 48  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 59  
tggaaggacc acttgatc agtcactcca gacagcatca gggatggg 48

<210> 60  
<211> 1413  
<212> DNA  
<213> Homo Sapien

<400> 60  
cggacgcgtg ggggtgcccga catggcgagt gtagtgctgc cgagcggatc 50  
ccagtgtgcg gcggcagcgg cggcggcggc gcctcccggg ctccggcttc 100  
tgctgttget cttctccgcc gcggcactga tccccacagg tgatgggcag 150  
aatctgttta cgaaagacgt gacagtgatc gagggagagg ttgcgacat 200





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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Ala | Ala | Ala | Pro | Pro | Gly | Leu | Arg | Leu | Leu | Leu | Leu | Leu |     |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |
| Phe | Ser | Ala | Ala | Ala | Leu | Ile | Pro | Thr | Gly | Asp | Gly | Gln | Asn | Leu |     |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |
| Phe | Thr | Lys | Asp | Val | Thr | Val | Ile | Glu | Gly | Glu | Val | Ala | Thr | Ile |     |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     |     | 60  |
| Ser | Cys | Gln | Val | Asn | Lys | Ser | Asp | Asp | Ser | Val | Ile | Gln | Leu | Leu |     |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     |     | 75  |
| Asn | Pro | Asn | Arg | Gln | Thr | Ile | Tyr | Phe | Arg | Asp | Phe | Arg | Pro | Leu |     |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     |     | 90  |
| Lys | Asp | Ser | Arg | Phe | Gln | Leu | Leu | Asn | Phe | Ser | Ser | Ser | Glu | Leu |     |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     |     | 105 |
| Lys | Val | Ser | Leu | Thr | Asn | Val | Ser | Ile | Ser | Asp | Glu | Gly | Arg | Tyr |     |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     |     | 120 |
| Phe | Cys | Gln | Leu | Tyr | Thr | Asp | Pro | Pro | Gln | Glu | Ser | Tyr | Thr | Thr |     |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     |     | 135 |
| Ile | Thr | Val | Leu | Val | Pro | Pro | Arg | Asn | Leu | Met | Ile | Asp | Ile | Gln |     |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     |     | 150 |
| Lys | Asp | Thr | Ala | Val | Glu | Gly | Glu | Glu | Ile | Glu | Val | Asn | Cys | Thr |     |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     |     | 165 |
| Ala | Met | Ala | Ser | Lys | Pro | Ala | Thr | Thr | Ile | Arg | Trp | Phe | Lys | Gly |     |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     |     | 180 |
| Asn | Thr | Glu | Leu | Lys | Gly | Lys | Ser | Glu | Val | Glu | Glu | Trp | Ser | Asp |     |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     |     | 195 |
| Met | Tyr | Thr | Val | Thr | Ser | Gln | Leu | Met | Leu | Lys | Val | His | Lys | Glu |     |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |     | 210 |
| Asp | Asp | Gly | Val | Pro | Val | Ile | Cys | Gln | Val | Glu | His | Pro | Ala | Val |     |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     | 225 |
| Thr | Gly | Asn | Leu | Gln | Thr | Gln | Arg | Tyr | Leu | Glu | Val | Gln | Tyr | Lys |     |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     |     | 240 |
| Pro | Gln | Val | His | Ile | Gln | Met | Thr | Tyr | Pro | Leu | Gln | Gly | Leu | Thr |     |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |
| Arg | Glu | Gly | Asp | Ala | Leu | Glu | Leu | Thr | Cys | Glu | Ala | Ile | Gly | Lys |     |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |
| Pro | Gln | Pro | Val | Met | Val | Thr | Trp | Val | Arg | Val | Asp | Asp | Glu | Met |     |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |
| Pro | Gln | His | Ala | Val | Leu | Ser | Gly | Pro | Asn | Leu | Phe | Ile | Asn | Asn |     |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     |     | 300 |
| Leu | Asn | Lys | Thr | Asp | Asn | Gly | Thr | Tyr | Arg | Cys | Glu | Ala | Ser | Asn |     |

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 305                                 | 310                     | 315 |
| Ile Val Gly Lys Ala His Ser Asp Tyr | Met Leu Tyr Val Tyr Asp |     |
| 320                                 | 325                     | 330 |
| Pro Pro Thr Thr Ile Pro Pro Pro Thr | Thr Thr Thr Thr Thr Thr |     |
| 335                                 | 340                     | 345 |
| Thr Thr Thr Thr Thr Thr Ile Leu Thr | Ile Ile Thr Asp Ser Arg |     |
| 350                                 | 355                     | 360 |
| Ala Gly Glu Glu Gly Ser Ile Arg Ala | Val Asp His Ala Val Ile |     |
| 365                                 | 370                     | 375 |
| Gly Gly Val Val Ala Val Val Val Phe | Ala Met Leu Cys Leu Leu |     |
| 380                                 | 385                     | 390 |
| Ile Ile Leu Gly Arg Tyr Phe Ala Arg | His Lys Gly Thr Tyr Phe |     |
| 395                                 | 400                     | 405 |
| Thr His Glu Ala Lys Gly Ala Asp Asp | Ala Ala Asp Ala Asp Thr |     |
| 410                                 | 415                     | 420 |
| Ala Ile Ile Asn Ala Glu Gly Gly Gln | Asn Asn Ser Glu Glu Lys |     |
| 425                                 | 430                     | 435 |
| Lys Glu Tyr Phe Ile                 |                         |     |
| 440                                 |                         |     |

<210> 62  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 62  
 ggcttctgct gttgctcttc tccg 24  
  
 <210> 63  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 63  
 gtacactgtg accagtcagc 20  
  
 <210> 64  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe

<400> 64  
atcatcacag attcccgagc 20

<210> 65  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 65  
ttcaatctcc tcaccttcca ccgc 24

<210> 66  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 66  
atagctgtgt ctgcgtctgc tgcg 24

<210> 67  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 67  
cgcggcactg atccccacag gtgatgggca gaatctgttt acgaaagacg 50

<210> 68  
<211> 2555  
<212> DNA  
<213> Homo Sapien

<400> 68  
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ccctctgctg ctgccgtgc tctgtact ggccctgggg cctgggggtgc 200  
agggctgccc atccggtgc cagtgcagcc agccacagac agtcttctgc 250  
actgcccgcc aggggaccac ggtgccccga gacgtgccac ccgacacggt 300  
ggggctgtac gtctttgaga acggcatcac catgctcgac gcaagcagct 350  
ttgccggcct gccgggcctg cagctcctgg acctgtcaca gaaccagatc 400

gccagcctgc gcctgccccg cctgctgctg ctggacctca gccacaacag 450  
 cctcctggcc ctggagcccc gcacccctgga cactgccaac gtggaggcgc 500  
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 cgcttgcgca acctccacga cctggatgtg tccgacaacc agctggagcg 600  
 agtgccacct gtgatccgag gcctccgggg cctgacgcgc ctgaggctgg 650  
 ccggcaacac ccgcattgcc cagctgcggc ccgaggacct ggccggcctg 700  
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| 110             | 115                 | 120                     |
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| Ala Leu Arg Leu | Ala Gly Leu Gly Leu | Gln Gln Leu Asp Glu Gly |
| 125             | 130                 | 135                     |
| Leu Phe Ser Arg | Leu Arg Asn Leu His | Asp Leu Asp Val Ser Asp |
| 140             | 145                 | 150                     |
| Asn Gln Leu Glu | Arg Val Pro Pro Val | Ile Arg Gly Leu Arg Gly |
| 155             | 160                 | 165                     |
| Leu Thr Arg Leu | Arg Leu Ala Gly Asn | Thr Arg Ile Ala Gln Leu |
| 170             | 175                 | 180                     |
| Arg Pro Glu Asp | Leu Ala Gly Leu Ala | Ala Leu Gln Glu Leu Asp |
| 185             | 190                 | 195                     |
| Val Ser Asn Leu | Ser Leu Gln Ala Leu | Pro Gly Asp Leu Ser Gly |
| 200             | 205                 | 210                     |
| Leu Phe Pro Arg | Leu Arg Leu Leu Ala | Ala Ala Arg Asn Pro Phe |
| 215             | 220                 | 225                     |
| Asn Cys Val Cys | Pro Leu Ser Trp Phe | Gly Pro Trp Val Arg Glu |
| 230             | 235                 | 240                     |
| Ser His Val Thr | Leu Ala Ser Pro Glu | Glu Thr Arg Cys His Phe |
| 245             | 250                 | 255                     |
| Pro Pro Lys Asn | Ala Gly Arg Leu Leu | Leu Glu Leu Asp Tyr Ala |
| 260             | 265                 | 270                     |
| Asp Phe Gly Cys | Pro Ala Thr Thr Thr | Thr Ala Thr Val Pro Thr |
| 275             | 280                 | 285                     |
| Thr Arg Pro Val | Val Arg Glu Pro Thr | Ala Leu Ser Ser Ser Leu |
| 290             | 295                 | 300                     |
| Ala Pro Thr Trp | Leu Ser Pro Thr Ala | Pro Ala Thr Glu Ala Pro |
| 305             | 310                 | 315                     |
| Ser Pro Pro Ser | Thr Ala Pro Pro Thr | Val Gly Pro Val Pro Gln |
| 320             | 325                 | 330                     |
| Pro Gln Asp Cys | Pro Pro Ser Thr Cys | Leu Asn Gly Gly Thr Cys |
| 335             | 340                 | 345                     |
| His Leu Gly Thr | Arg His His Leu Ala | Cys Leu Cys Pro Glu Gly |
| 350             | 355                 | 360                     |
| Phe Thr Gly Leu | Tyr Cys Glu Ser Gln | Met Gly Gln Gly Thr Arg |
| 365             | 370                 | 375                     |
| Pro Ser Pro Thr | Pro Val Thr Pro Arg | Pro Pro Arg Ser Leu Thr |
| 380             | 385                 | 390                     |
| Leu Gly Ile Glu | Pro Val Ser Pro Thr | Ser Leu Arg Val Gly Leu |
| 395             | 400                 | 405                     |

|                 |   |                         |
|-----------------|---|-------------------------|
| Gln Arg Tyr Leu | Gln Gly Ser Ser Val                         | Gln Leu Arg Ser Leu Arg |
| 410             |   | 420                     |
| Leu Thr Tyr Arg | Asn Leu Ser Gly Pro Asp Lys Arg Leu Val Thr |                         |
| 425             | 430   | 435                     |
| Leu Arg Leu Pro | Ala Ser Leu Ala Glu Tyr Thr Val Thr Gln Leu |                         |
| 440             | 445   | 450                     |
| Arg Pro Asn Ala | Thr Tyr Ser Val Cys Val Met Pro Leu Gly Pro |                         |
| 455             | 460   | 465                     |
| Gly Arg Val Pro | Glu Gly Glu Glu Ala Cys Gly Glu Ala His Thr |                         |
| 470             | 475   | 480                     |
| Pro Pro Ala Val | His Ser Asn His Ala Pro Val Thr Gln Ala Arg |                         |
| 485             | 490   | 495                     |
| Glu Gly Asn Leu | Pro Leu Leu Ile Ala Pro Ala Leu Ala Ala Val |                         |
| 500             | 505   | 510                     |
| Leu Leu Ala Ala | Leu Ala Ala Val Gly Ala Ala Tyr Cys Val Arg |                         |
| 515             | 520   | 525                     |
| Arg Gly Arg Ala | Met Ala Ala Ala Ala Gln Asp Lys Gly Gln Val |                         |
| 530             | 535   | 540                     |
| Gly Pro Gly Ala | Gly Pro Leu Glu Leu Glu Gly Val Lys Val Pro |                         |
| 545             | 550   | 555                     |
| Leu Glu Pro Gly | Pro Lys Ala Thr Glu Gly Gly Gly Glu Ala Leu |                         |
| 560             | 565   | 570                     |
| Pro Ser Gly Ser | Glu Cys Glu Val Pro Leu Met Gly Phe Pro Gly |                         |
| 575             | 580   | 585                     |
| Pro Gly Leu Gln | Ser Pro Leu His Ala Lys Pro Tyr Ile         |                         |
| 590             | 595   |                         |

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<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 70

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<210> 71

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 71  
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<210> 72  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 72  
ctgcccaccg tccacctgcc tcaat 25

<210> 73  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 73  
aggactgccc accgtccacc tgcctcaatg ggggcacatg ccacc 45

<210> 74  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 74  
acgcaaagcc ctacatctaa gccagagaga gacagggcag ctggg 45

<210> 75  
<211> 1077  
<212> DNA  
<213> Homo Sapien

<400> 75  
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cgccccgcca cctccttgct accccactct tgaaaccaca gctgttgcca 100  
gggtccccag ctcatgccag cctcatctcc tttcttgcta gcccccaaag 150  
ggcctccagg caacatgggg ggcccagtc gagagccggc actctcagtt 200  
gccctctggt tgagttgggg ggcagctctg ggggcccgtgg cttgtgccat 250  
ggctctgctg acccaacaaa cagagctgca gagcctcagg agagaggtga 300  
gccggctgca ggggacagga ggcccctccc agaatgggga agggatatccc 350  
tggcagagtc tcccggagca gagttccgat gccctggaag cctgggagaa 400



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 aggcctacag gccaaggat atggtgtccg aatccaggat gctggagttt 600  
 atctgctgta tagccaggtc ctgtttcaag acgtgacttt caccatgggt 650  
 caggtggtgt ctcgagaagg ccaaggaagg caggagactc tattccgatg 700  
 tataagaagt atgccctccc acccggaccg ggcctacaac agctgctata 750  
 gcgcagggtg cttccattta caccaagggg atattctgag tgtcataatt 800  
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 gtttgtgaaa ctgtgattgt gttataaaaa gtggctccca gcttggaaga 900  
 ccaggggtggg tacatactgg agacagccaa gagctgagta tataaaggag 950  
 agggaatgtg caggaacaga ggcattcttc tgggtttggc tcccgttcc 1000  
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 cttgcttctg ttccccatgg agctccg 1077

<210> 76  
 <211> 250  
 <212> PRT  
 <213> Homo Sapien

<400> 76  
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 Gly Asn Met Gly Gly Pro Val Arg Glu Pro Ala Leu Ser Val Ala  
 20 25 30  
 Leu Trp Leu Ser Trp Gly Ala Ala Leu Gly Ala Val Ala Cys Ala  
 35 40 45  
 Met Ala Leu Leu Thr Gln Gln Thr Glu Leu Gln Ser Leu Arg Arg  
 50 55 60  
 Glu Val Ser Arg Leu Gln Gly Thr Gly Gly Pro Ser Gln Asn Gly  
 65 70 75  
 Glu Gly Tyr Pro Trp Gln Ser Leu Pro Glu Gln Ser Ser Asp Ala  
 80 85 90  
 Leu Glu Ala Trp Glu Asn Gly Glu Arg Ser Arg Lys Arg Arg Ala  
 95 100 105  
 Val Leu Thr Gln Lys Gln Lys Lys Gln His Ser Val Leu His Leu  
 110 115 120

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Ile | Asn | Ala | Thr | Ser | Lys | Asp | Asp | Ser | Asp | Val | Thr | Glu |
|     |     |     | 125 |     |     |     |     |     | 130 |     |     |     |     | 135 |
| Val | Met | Trp | Gln | Pro | Ala | Leu | Arg | Arg | Gly | Arg | Gly | Leu | Gln | Ala |
|     |     |     | 140 |     |     |     |     |     | 145 |     |     |     |     | 150 |
| Gln | Gly | Tyr | Gly | Val | Arg | Ile | Gln | Asp | Ala | Gly | Val | Tyr | Leu | Leu |
|     |     |     | 155 |     |     |     |     |     | 160 |     |     |     |     | 165 |
| Tyr | Ser | Gln | Val | Leu | Phe | Gln | Asp | Val | Thr | Phe | Thr | Met | Gly | Gln |
|     |     |     | 170 |     |     |     |     |     | 175 |     |     |     |     | 180 |
| Val | Val | Ser | Arg | Glu | Gly | Gln | Gly | Arg | Gln | Glu | Thr | Leu | Phe | Arg |
|     |     |     | 185 |     |     |     |     |     | 190 |     |     |     |     | 195 |
| Cys | Ile | Arg | Ser | Met | Pro | Ser | His | Pro | Asp | Arg | Ala | Tyr | Asn | Ser |
|     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |     | 210 |
| Cys | Tyr | Ser | Ala | Gly | Val | Phe | His | Leu | His | Gln | Gly | Asp | Ile | Leu |
|     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     | 225 |
| Ser | Val | Ile | Ile | Pro | Arg | Ala | Arg | Ala | Lys | Leu | Asn | Leu | Ser | Pro |
|     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| His | Gly | Thr | Phe | Leu | Gly | Phe | Val | Lys | Leu |     |     |     |     |     |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     |     |

<210> 77  
 <211> 2849  
 <212> DNA  
 <213> Homo Sapien

<400> 77  
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 gggggggacc tgtggctgct cgtaccgccc cccaccctcc tcttctgcac 150  
 tgccgtcttc cggaagacct tttcccttgc tctgttttct tcaccgagtc 200  
 tgtgcatcgc cccggacctg gccgggagga ggcttgggcg gcgggagatg 250  
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 gaacagcagg agtgggaggg gactgaggag ctgccgtcgc ctccggacca 450  
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 aggggctccc tgcttcccgg tgcttgcgct gctgtgacct cggtaacctcc 550  
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|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 110                                 | 115                     | 120 |
| Ala Arg Gly His Thr Gly Pro Lys Gly | Gln Lys Gly Ser Met Gly |     |
| 125                                 | 130                     | 135 |
| Ala Pro Gly Glu Arg Cys Lys Ser His | Tyr Ala Ala Phe Ser Val |     |
| 140                                 | 145                     | 150 |
| Gly Arg Lys Lys Pro Met His Ser Asn | His Tyr Tyr Gln Thr Val |     |
| 155                                 | 160                     | 165 |
| Ile Phe Asp Thr Glu Phe Val Asn Leu | Tyr Asp His Phe Asn Met |     |
| 170                                 | 175                     | 180 |
| Phe Thr Gly Lys Phe Tyr Cys Tyr Val | Pro Gly Leu Tyr Phe Phe |     |
| 185                                 | 190                     | 195 |
| Ser Leu Asn Val His Thr Trp Asn Gln | Lys Glu Thr Tyr Leu His |     |
| 200                                 | 205                     | 210 |
| Ile Met Lys Asn Glu Glu Glu Val Val | Ile Leu Phe Ala Gln Val |     |
| 215                                 | 220                     | 225 |
| Gly Asp Arg Ser Ile Met Gln Ser Gln | Ser Leu Met Leu Glu Leu |     |
| 230                                 | 235                     | 240 |
| Arg Glu Gln Asp Gln Val Trp Val Arg | Leu Tyr Lys Gly Glu Arg |     |
| 245                                 | 250                     | 255 |
| Glu Asn Ala Ile Phe Ser Glu Glu Leu | Asp Thr Tyr Ile Thr Phe |     |
| 260                                 | 265                     | 270 |
| Ser Gly Tyr Leu Val Lys His Ala Thr | Glu Pro                 |     |
| 275                                 | 280                     |     |

<210> 79  
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 <212> DNA  
 <213> Artificial Sequence

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 <223> Synthetic oligonucleotide probe

<400> 79  
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<210> 80  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 80  
 ctgaagaagt agaggccggg cacg 24

<210> 81

00943780.083004

<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 81  
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<210> 82  
<211> 2284  
<212> DNA  
<213> Homo Sapien

<400> 82  
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ggcgccgggg tcctctcgac gccagagaga aatctcatca tctgtgcagc 150  
cttcttaaag caaactaaga ccagagggag gattatcctt gacctttgaa 200  
gacaaaaact aaactgaaat ttaaaatggt cttcggggga gaaggagct 250  
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 cccaaagtgc tgggattaca ggcatgagcc accacagctg gcccccttct 1950  
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 aaagtaataa agtataattg ccatataaat ttcaaaattc aactggcttt 2100  
 tatgcaaaga aacaggttag gacatctagg ttccaattca ttcacattct 2150  
 tggttccaga taaaatcaac tgtttatata aatttctaata ggatttgctt 2200  
 ttctttttat atggattcct ttaaaaactta ttccagatgt agttccttcc 2250  
 aattaaatat ttgaataaat cttttgttac tcaa 2284

<210> 83

<211> 431

<212> PRT

<213> Homo Sapien

<400> 83

Met Phe Phe Gly Gly Glu Gly Ser Leu Thr Tyr Thr Leu Val Ile  
 1 5 10 15

09943780-083001

|                     |                 |         |             |     |
|---------------------|-----------------|---------|-------------|-----|
| Ile Cys Phe Leu Thr | Leu Arg Leu Ser | Ala Ser | Gln Asn Cys | Leu |
| 20                  |                 | 25      |             | 30  |
| Lys Lys Ser Leu Glu | Asp Val Val Ile | Asp Ile | Gln Ser Ser | Leu |
| 35                  |                 | 40      |             | 45  |
| Ser Lys Gly Ile Arg | Gly Asn Glu Pro | Val Tyr | Thr Ser Thr | Gln |
| 50                  |                 | 55      |             | 60  |
| Glu Asp Cys Ile Asn | Ser Cys Cys Ser | Thr Lys | Asn Ile Ser | Gly |
| 65                  |                 | 70      |             | 75  |
| Asp Lys Ala Cys Asn | Leu Met Ile Phe | Asp Thr | Arg Lys Thr | Ala |
| 80                  |                 | 85      |             | 90  |
| Arg Gln Pro Asn Cys | Tyr Leu Phe Phe | Cys Pro | Asn Glu Glu | Ala |
| 95                  |                 | 100     |             | 105 |
| Cys Pro Leu Lys Pro | Ala Lys Gly Leu | Met Ser | Tyr Arg Ile | Ile |
| 110                 |                 | 115     |             | 120 |
| Thr Asp Phe Pro Ser | Leu Thr Arg Asn | Leu Pro | Ser Gln Glu | Leu |
| 125                 |                 | 130     |             | 135 |
| Pro Gln Glu Asp Ser | Leu Leu His Gly | Gln Phe | Ser Gln Ala | Val |
| 140                 |                 | 145     |             | 150 |
| Thr Pro Leu Ala His | His His Thr Asp | Tyr Ser | Lys Pro Thr | Asp |
| 155                 |                 | 160     |             | 165 |
| Ile Ser Trp Arg Asp | Thr Leu Ser Gln | Lys Phe | Gly Ser Ser | Asp |
| 170                 |                 | 175     |             | 180 |
| His Leu Glu Lys Leu | Phe Lys Met Asp | Glu Ala | Ser Ala Gln | Leu |
| 185                 |                 | 190     |             | 195 |
| Leu Ala Tyr Lys Glu | Lys Gly His Ser | Gln Ser | Ser Gln Phe | Ser |
| 200                 |                 | 205     |             | 210 |
| Ser Asp Gln Glu Ile | Ala His Leu Leu | Pro Glu | Asn Val Ser | Ala |
| 215                 |                 | 220     |             | 225 |
| Leu Pro Ala Thr Val | Ala Val Ala Ser | Pro His | Thr Thr Ser | Ala |
| 230                 |                 | 235     |             | 240 |
| Thr Pro Lys Pro Ala | Thr Leu Leu Pro | Thr Asn | Ala Ser Val | Thr |
| 245                 |                 | 250     |             | 255 |
| Pro Ser Gly Thr Ser | Gln Pro Gln Leu | Ala Thr | Thr Ala Pro | Pro |
| 260                 |                 | 265     |             | 270 |
| Val Thr Thr Val Thr | Ser Gln Pro Pro | Thr Thr | Leu Ile Ser | Thr |
| 275                 |                 | 280     |             | 285 |
| Val Phe Thr Arg Ala | Ala Ala Ala Thr | Leu Gln | Ala Met Ala | Thr |
| 290                 |                 | 295     |             | 300 |
| Ala Val Leu Thr Thr | Thr Phe Gln Ala | Pro Thr | Asp Ser Lys | Gly |



|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| 305                                 | 310                     | 315 |
| Ser Leu Glu Thr Ile Pro Phe Thr Glu | Ile Ser Asn Leu Thr Leu |     |
| 320                                 | 325                     | 330 |
| Asn Thr Gly Asn Val Tyr Asn Pro Thr | Ala Leu Ser Met Ser Asn |     |
| 335                                 | 340                     | 345 |
| Val Glu Ser Ser Thr Met Asn Lys Thr | Ala Ser Trp Glu Gly Arg |     |
| 350                                 | 355                     | 360 |
| Glu Ala Ser Pro Gly Ser Ser Ser Gln | Gly Ser Val Pro Glu Asn |     |
| 365                                 | 370                     | 375 |
| Gln Tyr Gly Leu Pro Phe Glu Lys Trp | Leu Leu Ile Gly Ser Leu |     |
| 380                                 | 385                     | 390 |
| Leu Phe Gly Val Leu Phe Leu Val Ile | Gly Leu Val Leu Leu Gly |     |
| 395                                 | 400                     | 405 |
| Arg Ile Leu Ser Glu Ser Leu Arg Arg | Lys Arg Tyr Ser Arg Leu |     |
| 410                                 | 415                     | 420 |
| Asp Tyr Leu Ile Asn Gly Ile Tyr Val | Asp Ile                 |     |
| 425                                 | 430                     |     |

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 cattccagat gcaccctgt ccagtgtgc ctatagcatc cgcagcatcg 150  
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 aggcgataac tctggaccga tgacaaagtt tattcagagt gctgctccaa 450  
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Asp Ala Lys Asn Ala Ile Glu Ala Leu Gly Ser Lys Glu Ile Arg  
170 175 180

Asn Met Lys Phe Arg Ser Ser Trp Val Phe Ile Ala Ala Lys Gly  
185 190 195

Leu Glu Leu Pro Ser Glu Ile Gln Arg Glu Lys Ile Asn His Ser  
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215 220 225

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**APPENDIX A**

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional applications listed below:

60/067,411 filed December 3, 1997;  
60/069,334 filed December 11, 1997;  
60/069,335 filed December 11, 1997;  
60/069,278 filed December 11, 1997;  
60/069,425 filed December 12, 1997;  
60/069,696 filed December 16, 1997;  
60/069,694 filed December 16, 1997;  
60/069,702 filed December 16, 1997;  
60/069,870 filed December 17, 1997;  
60/069,873 filed December 17, 1997;  
60/068,017 filed December 18, 1997;  
60/070,440 filed January 5, 1998;  
60/074,086 filed February 9, 1998;  
60/074,092 filed February 9, 1998;  
60/075,945 filed February 25, 1998;  
60/112,850 filed December 16, 1998;  
60/113,296 filed December 22, 1998;  
60/146,222 filed July 28, 1999.

**APPENDIX B**

I hereby claim the benefit under Title 35, United States Code, §120 of any United States and PCT patent applications listed below:

PCT/US98/19330 filed September 16, 1998;

PCT/US98/25108 filed December 1, 1998;

09/216,021 filed December 16, 1998;

09/218,517 filed December 22, 1998;

09/254,311 filed March 3, 1999;

PCT/US99/12252 filed June 2, 1999;

PCT/US99/21090 filed September 15, 1999;

PCT/US99/28409 filed November 30, 1999;

PCT/US99/28313 filed November 30, 1999;

PCT/US99/28301 filed December 1, 1999;

PCT/US99/30095 filed December 16, 1999;

PCT/US00/03565 filed February 11, 2000;

PCT/US00/04414 filed February 22, 2000;

PCT/US00/05841 filed March 2, 2000;

PCT/US00/08439 filed March 30, 2000;

PCT/US00/14042 filed May 22, 2000;

PCT/US00/20710 filed July 28, 2000;

PCT/US00/32678 filed December 1, 2000;

PCT/US01/06520 filed February 28, 2001.